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AGRICULTURE

No. 143

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I. GENERAL INFORMATION

PRC URGED TO EXERCISE UNIFIED MANAGEMENT OF RESOURCES

OW191121 Beijing XINHUA Domestic Service in Chinese 1231 GMT 18 May 81

[Excerpts] Beijing, 18 May (XINHUA)--Ma Shijun, Lu Baolin, Liu Jiankang and Xiong Yi, members of the Scientific Council of the Chinese Academy of Sciences, proposed that the state exercise unified management of the exploitation and utilization of natural resources and strengthen comprehensive scientific studies of the ecosystem so as to effectively maintain the ecological balance.

They made the proposal at the fourth session of the Scientific Council of the Chinese Academy of Sciences.

They proposed:

1. That the State Council set up a natural resources management commission, responsible for overall planning on large-area exploitation and utilization of land, rivers, lakes and seas, wild animal and plant resources and mineral resources, and promulgate and enforce a natural resources management law to put an end to the present state of administrative confusion with each department forming a system of its own;

2. That the State Scientific and Technological Commission strengthen coordination and administration of the state's major scientific research projects and eliminate the present drawbacks of scatteredness and repetition of scientific research subjects, lack of communications and the resultant waste in scientific manpower and funds;

3. That the Chinese Academy of Sciences set up a comprehensive scientific department (group), responsible for the planning, designing, examination and organization of the development of multiple-discipline studies; and

4. That the State Scientific and Technological Commission, the State Agricultural Commission, the Ministry of Education and the Chinese Academy of Sciences strengthen research and teaching work in the field of ecology, set up an ecological commission, design and coordinate in a well-planned way research on our country's agriculture, forestry, animal husbandry and water area ecosystem, draw up plans on protected natural areas, set up ecological specialties in key universities and colleges to train competent personnel, and so forth.

CSO: 5000/4070

NATIONAL

INTEGRATED OPERATION URGED FOR STATE FARMS

Beijing NONGYE JINGJI WENTI [AGRICULTURAL ECONOMIC ISSUES] in Chinese No 5, 1980 pp V21-V26

[Article by Guo Shutian [6753 2579 3944]: "State Farms Must Take the Road of Integrated Agricultural, Industrial, and Commercial Operations"]

[Excerpts] Pilot Project Situation

In September 1978 when Chairman Hua inspected the Shihezi reclamation zone in Xinjiang Province, he gave instructions for the pilot operation of integrated agricultural, industrial, and commercial enterprises. In late September, the State Council followed up with the convening of a symposium on the pilot operation of integrated agricultural, industrial, and commercial enterprises, designating as pilot project sites the provinces, municipalities, and autonomous regions of Beijing, Tianjin, Shanghai, Harbin in Heilongjiang, Shihezi in Xinjiang, Guangdong, and Sichuan. In November, acting in accordance with instructions from the State Council, the National Bureau of Farms and Land Reclamation convened a national agricultureand land reclamation symposium, which discussed in detail problems in the operation of integrated enterprises, and drafted a "Summary of Conversations on Earliest Operation by State Farms of Agricultural, Industrial, and Commercial Integrated Enterprises." Following the meeting, each province, municipality, and autonomous region began investigation and study, the selection of pilot project units, the formulation of plans, and active pilot operations. The "Resolutions of the CCP Central Committee on Various Problems in Hastening the Development of Agriculture" passed by the Fourth Plenary Session of the 11the Party Central Committee explicitly provided for state farm "operation of agricultural and livestock products processing industries, the development of commercial industries to sell their own products, and the earliest possible establishment of agricultural, industrial, and commercial integrated enterprises." In July 1979, State Council document Guofa (1979) No 183 approved and forwarded "Summary of Conversations on Earliest Operation by State Farms of Agricultural, Industrial, and Commercial Integrated Enterprises" to give vigorous impetus to development of pilot project work. In August 1979, the Ministry of Farms and Land Reclamation convened a report-back meeting on pilot project sites for agricultural, industrial, and commercial integrated enterprises in 12 provinces, municipalities, and autonomous regions. At the present time, the farming and land reclamation system has more than 100 pilot project units nationwide, one kind of which is in places where farms are concentrated and under joint operation of the farms. Farms located at Shihezi in Xinjiang Province, at Dongxi Hu in Wuhan, and in the suburbs of the large cities of Beijing, Tianjin, Shanghai, and Harbin are all integrated enterprise companies formed by various units in the farming and reclamation system. The Bureau of Farms and Land Reclamation is the management organization for the farms as well as an organization in the integrated enterprises company. In addition to the processing industries for grain, oil, sugar, cotton, fur, hides, and paper that are part of the Shihezi integrated enterprise, other integrated enterprises there also produce, process, and market in a coordinated process mostly cow's milk, fruits, tea, and other by-products. They have established marketing networks in cities through which they directly sell their products. The second kind has scattered production and unified marketing. One such is the marketing organization set up by the Bureau of Agriculture and Land Reclamation in Jiangsu Province, which markets products from farms throughout the province. The third kind is establishment of special companies, such as the ginseng and deer antler company in Jilin Province coomprising 70 ginseng and deer antler farms, and the fruit company comprising 6 orchards in Yanbian Autonomous Zhou. The fourth kind is an economic amalgamation of similar communes and brigades, and similar industries and businesses. The Chongqing integrated enterprise conducts integrated processing and integrated marketing of fruit and tea output with communes and brigades. The Shanxi Xinding Agriculture and Livestock Farm has integrated its milk production with that of nearby production teams. The Huguang integrated enterprise in Zhanjiang has made joint investments with commercial units for the building of a business building. The Nanning Municipal Integrated Enterprise has been formed from the integration of food processing plants of farms and light industrial units.

No matter the form adopted for integration, each jurisdiction gives attention to the principle of adhering to economic integration to achieve mutual advantages. As of the present time, there are the following three main methods: one is a signing of contracts with mutual economic responsibilities. Second is partnership operations with a sharing of profits. Third is the use of "internal prices", to increase the income of units producing raw materials.

Integrated enterprises may be large, medium, or small in size. Currently the largest one is the Shihezi Integrated Enterprise in Xinjiang, which has more than 3 million mu of cultivated land, 12 large and medium size industrial plants and 20 farms. It also has a commune and a commercial network to go with its operations. The size of integrated enterprises must be adjusted to local situations, and usually develop from the small to the large. Experience has shown that the operation of agriculture, industry, and commerce in a coordinated process on farms that are not very large may present many difficulties if integration is done with surrounding communes and brigades. It may result in the formation of "small but complete" enterprises.

Preliminary experience during the past year has shown that the operation of agricultural, industrial, and commercial enterprises in accordance with objective economic laws has numerous advantages, and has vitality. First of all, integrated enterprises change the status of agriculture as only a producer of raw materials. They both produce raw materials and process and market products themselves. This is a fine way to increase capital accumulations, change the backward state of agriculture, hasten the development of agriculture, and bring about the modernization of agriculture. Quite a few farms are presently operating at a loss, some of them able to maintain only simple further production. After they began to operate integrated enterprises, some farms used an appropriate portion of profits from processing and marketing to make reasonable distributions to units producing raw materials to increase the initiative of farm and livestock production units, making them rapidly change from operating at a loss to operating at a profit. Because the cost of producing milk in Beijing was higher than the purchase price paid, enthusiasm for production was adversely affected. Following operation of an integrated enterprise this year that used internal pricing to increase the purchase price by an appropriate amount, milk output for the first half of the year, increased by 2 million jin over last year. At the beginning of the year, two dairy farms in Chongqing made deficit plans, but after economic integration with the milk company, they tapped production potential, turning a profit in the first half of the year. Secondly, many farms have a surfeit of labor, and thisproblem will become more prominent with an increase in the degree of mechanization and natural increase in the workforce.

Operation of integrated enterprises offers numerous production avenues and opportunities for excess manpower. Third, the economic strength of many firms is very thin, and it is frequently impossible because of capital limitations to operate an enterprise by using one's own resources. After operating an integrated enterprise, by combining individual units and pooling capital, it is possible to do what no single unit could do by itself, and speed development of production. Fourth, integrated enterprises directly market their own products, reduce intermediary links, reduce waste and losses incurred in storage and transportation, fatten supply of markets, and enliven the market economy. When the Tianjin Integrated Enterprise Company went into fruit production, savings, and marketing as part of a coordinated whole, the fruit was fresh, prices were low, farm earnings increased 13.3 percent, consumers reduced their expenses, and both the farm and the masses were satisfied. Fifth, when integrated enterprises integrate economically with surrounding communes and brigades and return to the brigades and communes a portion of profits from processing and sales, the income of of communes and brigades is increased and relations between the farms and communes and brigades are cemented. The Qingfeng tea plantation in Chongqing integrated with six brigades in surrounding communes, thereby increasing by 40 percent commune and brigade income from fresh tea and increasing the enthusiasm of commune members. They returned to production an abandoned tea plantation in an expansion of tea plantation acreage.

Definite progress has been made during the past year in integrated enterprise pilot projects, but as a result of restrictions imposed by the prevailing system of economic management, there are numerous obstacles and repeated difficulties.

More and more people have come to praise the pilot operation of agricultural, industrial, and commercial enterprises by state farms, but for lack of understanding of them plus the influence of traditional habits, quite a few people still harbor suspicions and an attitude of opposition. For example, some people feel that agricultural units should devote themselves to agriculture, and that running industrial and commercial enterprises is "not doing their proper work;" or that integrated enterprise operation of businesses may upset the unified market of socilism, etc. Consequently all sorts of methods must be employed to widely propagandize the CCP Central Committee's and the State Council's decisions to have state farms operate agricultural, industrial, and commercial integrated enterprises as quickly as possible, and to propagandize the need and important significance of agricultural, industrial, and commercial integrated enterprises for a unified understanding and unified action. Because of the strong policy nature and wide involvement of the pilot operation of agricultural, industrial, and commercial enterprises, there are numerous problems that agricultural units are themselves unable to solve, and which require provincial, municipal, and autonomous region CCP committees strengthening of leadership as well as the active support and coordination of pertinent authorities. The pilot unit experiences attest that whenever the CCP committees strengthen leadership and authorities concerned closely cooperate, pilot project work proceeds quite smoothly. Conversely, there are many bottlenecks and running into walls at every turn making pilot project work just inch along. The number one problem in the pilot programs was conflict between the integrated enterprises and the existing system of economic management and certain economic policies. We believe that for the sake of gaining experiences in pilot projects, pilot project units must be permitted to break through all the red tape, untie their hands and feet, and courageously experiment. It is hoped that the Central Committee and local authorities will give active support; and it is hoped that economic study units will aid our appeal. We propose that the agricultural, industrial, and commercial integrated enterprise pilot projects be combined with the pilot projects for reform of the economic system. This will both help pilot project work for the integrated enterprises and can derive experience for reform of the system.

Several Economic Policy Problems

In order to abet development of integrated enterprises, some prevailing economic policies require changes, which the integrated enterprises themselves lack authority to effect, and which authorities concerned should study. Most important are the following:

(1) Tax Revenue Problems. Once production, processing, and sales have been coordinated into a single process, everyone asks that taxes be levied only on the final product rather than duplicate taxes. Right now there are four taxes from the growing of sugarbeets, to the making of candy, to selling it. This problem invdives national tax laws and requires study by revenue authorities.

(2) Capital Problem. In addition to capital construction investment made by the state and profits for integrated enterprises themselves, it is requested that banks provide integrated enterprises a source of capital through the issue of long term low interest loans.

Everyone was very happy upon hearing recently that the Bank of Agriculture had decided to allocate funds for the support of integrated enterprises. They asked, however, that conditions be liberalized, particularly that the interest be a little lower, and that the limitation on the number of years till repayment be a little longer. Additionally, some integrated enterprises requested establishment of an "internal bank."Beijing municipal integrated enterprise units have more than 1,000 bankdepositors with savings of over 40 million yuan. The integrated enterprises may not touch these funds. They have proposed that individual bank deposits from various farms be centralized in a single account to help integrated enterprises use them. This involves fiscal system problems, which it is hoped will be studied.

(3) Foreign Trade Problems. Integrated enterprises request that, as a first step, all export items not go through commercial units but rather be turned over directly to foreign trade units. This will cut out one intermediary link and require payment of one less handling charge. A second step is permitting integrated enterprises to establish contact with foreign traders either directly or through departments responsible for exports, and that their own foreign exchange may be used to make imports. This involves national foreign trade system problems, which foreign trade authorities should be asked to study. A beginninghas been made in the retention of foreign exchange from exports, but everyone says that the proportion retained by enterprises is too low. They asked that before substantial changes have been made in the foreign trade system that an increase be made in the proportion shared. China's farms produce numerous products that enjoy high repurtations in foreing markets.

(4) Business Price Subsidy Problems. The price difference for non-staple foodstuffs (such as meat, eggs, and fish) sold by commercial units is subsidized by the state. When integrated enterprises sell these products, commercial departments subsidize them in Shanghai, Haerbin, Luda, and Wuhan, but some problems ramain. It is requested that this be likewise handled by commercial units.

(5) Award Sale Materials Problem. When integrated enterprises sell the state agricultural and livestock products, they should enjoy award sales of materials in just the same way as rural communes and brigades. For integrated enterprises linked up with communes and brigades, when commune and brigade products are purchased, the integrated enterprises should also be allowed award sales by the state for all products for which the state has established award sales.

(6) Price Problems. Integrated enterprises should institute "internal prices," for use in regulating the economic benefits of agriculture, industry, and business for support of the development of agriculture. When goods are marketed outside the enterprise, all goods except those for which the state has stipulated a uniform price should be permitted sale at negotiated prices with high quality commanding high prices.

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CHANGES IN SIZE OF CROP AREAS

Beijing NONGYE JINGJI WENTI [AGRICULTURAL ECONOMIC ISSUES] in Chinese No 5, 1980, p V35

[Article by Wu Shuo [0702 4311]: "A View of Readjustment of Agricultural Patterns"]

[Excerpts] At the present time contradictions between the growth of production of grain and economic crops in China, and what the growth should be are very sharp. Under these circumstances, how to achieve growth of both grain and economic crops is not like the former one sided emphasis on the growing of grain by squeezing out some economic crops, nor is it conversely having everything else squeeze out grain, thereby increasing the shortfall in grain output and sales. Therefore, there must be planned and measured readjustment of the pattern of farming in agriculture, and good handling of the relationship between increased growth of grain and development of economic crops, particularly the problem of competition for land among grain and cotton, oil-bearing crops, and sugar. In order to make a sensible readjustment of the pattern of farming in agriculture, we will look, first of all, at changes in the agricultural pattern during the past 20 years. (Units: 100 million mu)

	1957	1978	Comparative increase or decrease between 1957 and 1978
Cultivated Land area	16.77	14.91	-1.86
Sown area	23.59	22.51	-1.08
Including: Grain crops	20.05	18.09	-1.96
as a percentage of sown area	85%	80.4%	-4.6%
Economic crops	2.17	2.17	0
As a percentage of sown area	9.2%	9.6%	+0.4%
Other crops	1.37	2.25	+0.88
As a percentage of sown area	6%	10%	+4%

Looked at in terms of the farming pattern, the area sown to grain crops has decreased by about 200 million mu, the proportion declining from 85 to 80 percent. The area sown to economic crops remained virtually steady with only slight increase the proportion increasing from 9.2 percent to 9.6 percent. The area sown to all other crops increased by about 90 million mu, the proportion increasing from 6 to 10 percent. In the area sown to 12 different farm crops, decline was greatest for grain. Second was cotton, which declined by more than 13.6 million mu. Next was oil-bearing crops, which declined by more than 10 million mu. In addition, vegetables declined by somewhat more than 6 million mu, and finally, mulberry groves declined by 4.81 million mu. For seven other crops, the area sown increased. It should be pointed out here in regard to grainfield area that inasmuch as statistics are incomplete for the creation of fields from the clearing of wasteland in numerous places, and inasmuch as some areas falsified per mu output to "show progress," by underreporting the grainfield area or by operating "fields that support programs," the grainfield area is larger than the statistics indicate. The actual situation may be that some grainfields were squeezed out by capital construction, and that grainfields, in turn, squeezed out a portion of the economic crop area.

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NEW METHOD FOR BREEDING HYBRID RICE DISCUSSED

Beijing NONGCUN KEXUE /RURAL SCIENCES/ in Chinese No 3 1981 p 5

/Article by Liu Wenbing /0491 2429 3521/: "A New Method of Hybrid Rice Seed Production"/

/Text/ Hybrid rice seeds are currently produced in one of two ways: One is the two stage male parent seed production method in which the male parent is sown in two different stages and transplanted in two different stages in order to assure that the blossoming stage of the male and female parents (i.e. the restorer line and the sterile line) coincide. The other is the male parent transplant method of seed production whereby the male and female parents are transplanted to different plots, with the male parent being sown at different times and transplanted in different batches. Before the female parent begins blossoming, male parents whose blossoming will coincide with that of the female parent are moved to the female parent field so that pollinization to produce hybrids can take place. A comparison of these two methods shows the two stage male parent production method to be simpler and less wasteful of labor than the male parent transplant method of seed production. However, as a result of climate, soil and anthropogenic factors, frequently the blossoming stages may not coincide and the quantity of seeds produced cannot be assured. By using the male parent removal seed production method, coincidence of the blossoming stages can be assured, but a separate "field for the supply of male parents" must be set up. Much work is required in the removal of male parents and, unless care is taken, roots may often sustain damage or buds and panicles may be killed, the quantity of pollen thereby being impaired. Therefore, as a practical matter, this method cannot be promoted for use over wide areas.

In order to assure that the blossoming stages coincide to win consistently high outputs in seed production, the hybrid rice seed production team of Guanqian Commune, Longqi County, Fujian Province designed a three stage male parent seed production system in 1979. As a result, in the growing of seven different combinations of hybrid medium crop hybrid rice on more than 240 mu seed production fields in the commune, yields averaged 196 jin per mu. From the more than 200 mu condinuous tract in the Pinghu Brigade of the commune, yields exceeded an average 200 jin per mu, and on more than 80 mu, yields reached 307 jin per mu.

Their specific methods were as follows: The male parents were planted in three stages and seedlings were transplanted in two batches. The first batch of transplants consisted of male parents sown during the first and second stage; male parents from the second stage were transplanted into a single row of second stage male parents. First stage male parents were transplanted to a row along the outside of the second stage male parents, with one plant being planted in the outside row for every three inside, and spaces for two plants being left blank. The second batch consisted of third stage male parents, which were planted in the two plant spaces left blank in the planting of the first stage male parents. The seedling transplantation ratio of the three stages of male parents was 1:3:2. The second stage male parents were sown 5 days after the first stage male parents, meaning that the first stage male parents had a seedling age of 30 days; the second stage male parents had a seedling age of 26 days, and the third stage male parents had a seedling age of 25 days. Six days following sowing of the second stage male parents, sowing of the third stage male parents began. The period for sowing of the female parent depended primarily on the state of the leaf blades of the second stage male parents.

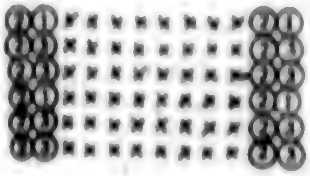
The three stage seed production methods has the following several advantages:

1. It assures coincidence of the blossoming periods. The first stage male parent in the three stage male parent seed production method is sown from 4 to 5 days earlier (depending on the combinations planted) than the first stage male parent in the two stage male parent seed production method, and sowing of the second stage male parent is delayed 2 days in the three stage male parent seed production method as compared with the two stage male parent seed production method. In this way the blossoming time of the male parent is extended, thus assuring a coincidence of the two blossoming periods.

2. Prolongation of the period of full bloom of the male parent. Many years of observation show that the blossoming period for female parents endures for from 12 to 14 days, while in the two stage male parent seed production method, the blossoming time is only about 10 days. Since in the two stage male parent seed production method a difference of 8 days exists between the transplanting of first stage and second stage male parent seedlings, the period of full bloom for each stage is only 5 or 6 days, meaning that 1 or 2 days of the first stage and the second stage male parents will be not a period of full bloom, thus impairing pollinization. In the three stage male parent seed production method, a difference of 6 days exists between the transplanting of second stage and third stage seedlings. The period of full bloom of first stage male parents overlaps beginning of blossoming of second stage male parents. The last blossoms of the second stage male parents overlap the first blossoms of the third stage male parents, assuring that the period of full bloom of the male parents will not be cut short. The total period of full bloom is from 13 to 14 days, which is about what it is for the female parents. Pollinization rate may run to between 45 and 48 percent or as high as 58 percent.

3. The three stage male parent seed propagation method surmounts the expenditure of labor problem of the male parent transplant method of seed production as well as the problem of setting up "fields to supply male parents," and the shortcoming of a lack of pollen.

Therefore, the three stage method of seed production is superior both to the two stage method of seed production and the male parent transplant method of seed production.



三期父本制种
田间排列示意图
①为一期父本，②为二期父本，
③为三期父本，×为母本

Diagram Showing Field Layout in Three Stage Male Parent Seed Production

① First stage male parent
② Second stage male parent
③ Third stage male parent
× Female parent

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CSO: 4007/328

CMC CROPPING SYSTEM DESCRIBED

Beijing NONGGUN KEXUE /RURAL SCIENCES/ in Chinese No 3 1981 pp 18-19

/Article by Chen Qingshuo /7115 3237 4311/: "A Cropping System Worthy of Promotion--the CMC System"/

/Text/ What Is the C.M.C. System

C.M.C. is an abbreviation for a farming system whereby green manure (M) and grain (or economic) crops (C) are rotated, intercropped, mixed in, interplanted, or interspersed, with green manure being used as a top dressing of fertilizer. The system's ingredients cannot be completely reflected in a simple system of intercropping of grain and green manure. China has a multitude of names for methods of intercropping, interplanting, and intermixing crops. Rough statistics from Shanxi, Hebei, Shandong, Henan, Jiangxi, and Zhejiang alone show more than 100, and for every method of intercropping, interplanting, and intermixing farm crops there may be numerous ways of intercropping, interplanting, and intermixing grain and green manure, confusing people and making study most inconvenient. About the central ingredient in the C.M.C. farming system, however, it is possible to make a unified classification of complex grain and green manure farming methods using a definite principle. The relationships between the colonies that form the two kinds of plants, grain (C) and green manure (M) are of no more than two kinds: one is the relationship between the fore crop and the after crop, i.e. rotational cropping and intermingled cropping; the other is the relationship between crops grown together, i.e. in intercropping, interplanting, and intermingling. The various changes in the methods of rotating, intercropping, interplanting, intermixing, and interspersing of grain and green manure are, in fact, C.M. The two kinds cause changes in the constituent forms of space. On the basis of the number of times a year when grain is harvested, all the several hundred methods of rotating crops, intercropping, interplanting, intermixing, and interspersing may be summed up in four different forms, namely one grain crop, two grain crops, three grain crops, and four grain crops. On the basis of the number of times green manure is covered (covering of the green crop to serve as a base fertilizer) and inserted (the introduction of green manure from elsewhere to serve as base fertilizer), a further hypotype of the four forms may be delineated such as two grain and one green manure crop, two grain and two green manure crops, and two grain and three green manure crops. And within each hypotype, there can be a different make-up (See Plate). On the basis of the make-up, a person is able to see at a glance the crop and green manure distribution pattern in a form, thereby making it possible to compare the land use and land nurture characteristics of each different form. Because each make-up makes different demands on natural socio-economic conditions, at the time of use, selection must be made by adapting general methods to local situations. Thus, the abbreviation of complex grain and green manure rotational cropping, intercropping, interplanting, intermixing, and interspersal as the C.M.C. system not only possesses many advantages, but it helps in making a thoroughgoing study.

图自左至右：1.二粮二肥复合结构模式图；2.水稻套萍；3.麦收玉米[illegible]

1. Rotational cropping 2. Intercropping of mixed crops

Plate from left to right: 1. Form diagram showing two grain crops and two green manure crop hypotype structure; 2. Paddy rice intercropped with duckweed; 3. Corn on green manure following harvest of wheat.

Nurture Through Use and Nurture to Promote Use

The most essential distinctions between the C.M.C. system and the intercropping, interplanting, and intermixing of farm crops that has long been used in China are: The new system is able to solve the fertilizer problem internal to production. The new system advocates the growing of green manure for a short period of time between the rows of crops and using it as a top dressing of fertilizer. For example, between the rows of broad row crops such as corn, cotton, and sweat potatoes can be an early spring intercropping with sweet clover or common vetch, and during summer intercropping can be with Chengma /7906 7802/, sesbania, tares, or mung beans. These green manures not only do not take up much land, but their output is considerable.

Spring intercropping can yield more than 2000 jin, and low output from summer intercropping can yield 600 to 700 jin. When ringed around the roots of crops, they increase the concentration of nutrients in part of the soil, and a small amount of green manure can play a fairly large role. In addition, no matter whether the green manure is of the spring or winter type, so long as temperature conditions permit, it may be interplanted or intercropped. Experiments at Huaibei in Anhui Province have shown that when Chinese trumpet creeper, a winter season green manure was grown in spring for use as a top dressing before the nine leave stage of corn, fresh trumpet creeper yields were 732 jin per mu. After being applied as a top dressing and watered once, corn yields increased 20 percent. This not only shows up the several thousand year old idea that green manure may be used only as a base fertilizer, but also counteracts the traditional notion that in the crop rotation of grain and green manure that as a result of having grown green manure in one season frequently one season less of grain will be harvested. For example, on the North China Plain where drylands are numerous and an annual two crop system of wheat and corn is followed, organic fertilizer comes mostly from mud fertilizer, compost, and barnyard manure. But the stalks and stems of plants are mostly used for fuel in rural villages, and frequently one feels an insufficiency of organic fertilizer. If green manure is planted in one season, one crops less of either wheat or corn will be harvested, which hurts increased output for that year. But by using the C.M.C. system, growing the wheat in strips and growing Chinese trumpet creeper in the empty strips between wheat strips, before the wheat is harvested, the trumpet creeper can be covered over and corn intercropped on it, and after the wheat has been harvested, summer green manures such as mung beans and sesbania may be grown, a part of which may be used as green manure for the corn, and most of which can serve as base fertilizer for the following year's wheat crop. The results of 8 years experience in the use of this method by the Dongcun Brigade of Lu County in Shandong Province shows grain yields of 1,100 to 1,600 jin per mu, and green manure yields of from 3,000 to 5,000 jin per mu. Cost of producing grain declined to .01 yuan per jin. This crop pattern of two grain crops and two green manure crops merits consideration throughout the entire North China Plain.

It may be seen that the most important characteristic of the new system is both multiple crops in a single year with the growing of crops on top of the area where green manure had been grown, and large rows of high stem crops being able to receive top dressings of green manure. It is possible to have both grain and green manure in simultaneous achievement of general use with general nurture, nurture occurring through use, and nurture promoting use. Soil use and soil nurture combine to achieve a rather perfect situation.

Improvement and Mellowing of the Soil

The C.M.C. system is also a means of improving the soil and quickly mellowing the soil. In experiments conducted in Guangdong Chinese milk vetch was grown in winter on low yield paddy fields and used as green manure in the spring to grow duckweed, which was covered and rice grown on it, with sasabenia and summer duckweed intercropping among the rows of rice. After the rice was harvested, late rice was grown. In the course of a year there were four crops of green manure and two of grain, namely Chinese milk vetch - earth rice - late rice Next, deep plowing was done,

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                milk vetch - earth rice
                 |              |
              duckweed       sasbenia
                                |
                             duckweed.
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phosphate fertilizer, lime and jiake soil /0500 1356 0960/ (vegetable garden soil) applied, and some other measures taken whereby the quantity of organic matter infused into the soil was greatly increased, and both the organic and inorganic composition placed in a highly vigorous state, the soil thereby quickly multiplying its fertility and increasing output. Annual rice output vaulted from 822.2 jin per mu to 1578.3 jin per mu.

Problems Meriting Attention

The C.M.C. system places special requirements on production conditions and techniques. In promoting it, general attention should be given the following several problems.

First, for different types of soil, special emphasis must be placed on the form of crop distribution. In remote areas where there is much land relative to population and the workforce is in short supply, the rotational cropping of one grain crop and one green manure crop (C-M) is suitable. The farther one gets from remote areas toward densely populated areas, where the multiple cropping index gradually increases, a C.M.C. system of two grain crops, three grain crops, or four grain crops with one, two, or three green manure crops can be practiced. In all areas to which the C.M.C. system spreads, conditions for irrigation must exist; otherwise development of green manure on drylands will be limited.

Second, the ratio of grain to green manure must be set up just right so that there is no drop in output of each season's crops. Experiments have shown that under identical conditions for strip planting of green manure in empty rows between wheat, the wheat area should be no less than 70 percent the area of the entire field, and the quantity of seeds sown should be no less than when the crop is ordinarily sown. A 25 percent increase in output as compared with no planting of green manure in the empty rows is possible, and an 8.6 percent increase in output over ordinary planting is possible. If the proportion of green manure is too great, the marginal effectiveness cannot compensate the loss from planting of less grain, occassioning reduced output for the season.

Third, concentrate fertilizer for the whole field on the two-thirds of the area where the wheat is growing in strips, applying on the two thirds of the area where the wheat is growing in strips, applying only a small amount of potash fertilizer to the one-third of the area occupied by strips of green manure. This method of applying fertilizer in strips is a major measure in the C.M.C. system that assures both increased grain output and increased green manure.

Fourth, in using green manure with intercropping corn, it should be applied for ear formation, and application should be completed before reproductive growth (at the nine leaf stage) if the goal of increased output is to be attained. Since the addition of green manure may damage the roots of the corn somewhat, if it is applied after the beginning of reproductive growth and the root system is unable to recover from the damage, reduced output may easily result. Additionally, the height of the green manure should not exceed the height of the ears, and after the green manure has been applied, watering must be done at once.

Fifth, in using the C.M.C. system, it is necessary to have an abundant workforce for follow-up. In order to reduce the intensity of labor, there should be vigorous development of intercropping machines and use should be made of existing machinery. In Lu County in Shandong, wheat harvesters for strip fields were used, as were sowing machines and machines for covering over green manure. In the suburbs of Jinan, large towing machines were hitched up to small implements for cultivation and weeding of strip fields, and they played an active role in promotion of the C.M.C. system.

Sixth, green manure superior variety bases have to be established, and real efforts made to plant in the 10 besides /small plots of land by the sides of houses, roads, ponds, etc/, to improve seed production techniques, and to carry out seed policies for green manure.

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MEASURES TO PROTECT FISHERY RESOURCES EMPHASIZED

Beijing HUANJING BAOHU /ENVIRONMENTAL PROTECTION/ in Chinese No 1 1981 pp 11-13

/Article by Zhang Guanzhong /1728 7070 1813/: "Where Have the Fish Gone?"/

/Text/ There is a definite mutual adaptation and self-regulatory ability between fishery resources and environmental conditions in bodies of water to maintain a dynamic balance of the ecological systems. But when the environmental conditions undergo major changes beyond certain limits, the fishery resources will be adversely affected.

Fishery Resources Seriously Destroyed

Our nation faces the sea on the south and the east. The coastline is over 18,000 kilometers long, and there are some 1.5 million square kilometers of continental shelf fishery zones within a depth of 200 meters. The area of shallow seas and beaches is close to 100 million mu. According to incomplete statistics, the area suitable for sea water fish culture is about 7.4 million mu. The area of inland waters is about 300 million mu. Besides the Changjiang, Huanghe, Heilongjiang and Zhujiang river systems, there are also more than 2,800 large and medium-sized lakes and inland seas as well as countless reservoirs and ponds. Those suitable for culture cover about 75 million mu. The fishery resources are relatively rich. According to preliminary surveys, there are over 2,300 species of sea water and fresh water fish. The more frequently seen are economic fish species, over 100 species of sea water fish, 40 to 50 species of fresh water fish, and several dozen species of shellfish and algae. Superior natural environmental conditions and rich fishery resources are good material foundations for developing fishery production. But for a long time, because man's productive activities went against the objective natural patterns, fishery environments were seriously destroyed, causing drastic degeneration of fishery resources and changes in schools of fish in the fishing zones. Some zones have become unsalvageable, as concretely manifested in the following aspects.

1. Blind encirclement of the sea to create fields, building fields on the embouchure layer, changing beaches along the seacoast and the environmental factors of the mouths of rivers to the sea--all these have affected the growth of certain shellfish and algae; large bases for fry and sea water culture along with many spawning areas of fish and shrimp have been destroyed. According to incomplete statistics, over 1 million mu of beaches along the seacoast traditionally for fish culture have been encircled for farmland.

The precious lancelet unique to our nation is between a vertebrate and an invertebrate and is the ancestor of fish. It has important significance in taxonomy. The lancelet is suited for living in shallow sea water and beaches where there are shells, sand and gravel. The coast of Xiamen city in Fujian Province produces a lot of lancelet. Because the Xinglinwan construction project to reclaim the sea has caused silting, the silt has continuously covered up the layer of sand, destroying the ecological and environmental conditions of the lancelet. The resources have visibly dwindled. The yield dropped from 115,000 jin in 1956 to 4,700 jin in 1969. At present, the lancelet is almost extinct, and irreparable damage has been caused.

2. In building water conservancy projects, blocking rivers and building dams, corresponding passages for fish have not been built. This stops the migratory passage of fish and also destroys the environmental conditions of natural spawning grounds of certain species of fish. These are the major reasons for the drastic decline of fresh water fishery resources, especially migratory and semimigratory fish resources.

The Changjiang River valley is our nation's richest fresh water fishery resource. Since the founding of the nation, several thousand large and small culverts and floodgates have been built along the river, but only very few have passages for fish. Along the entire river valley, there are over 50 lakes covering over 100,000 mu. Except for Boyanghu and Dongtinghu, all the rest have been completely separated from the Changjiang, causing the amount of resources of black carp, grass carp, silver carp, big head carp, common carp, and phrynosoma to decrease, while the proportion of silverfish, longtailed anchovy and lake shrimps and similar small fish and shrimps have increased.

3. Massive encirclement of the lakes to create fields has caused the area of water to shrink. Aquatic plants have been destroyed. The spawning and growing grounds of certain fish (such as areas banking lakes where aquatic weeds and grasses grow abundantly and are grounds for the common carp and the gold carp to spawn glutinous roe and grow) have been destroyed. At the same time, the water storage of lakes and the ability of the lakes to regulate the surrounding environment and climate have decreased. According to preliminary statistics, the nation's lakes cover over 20 million mu in area. In 1957, our nation's largest lake, Boyanghu, covered 7.15 million mu. Now, 1.3 million mu have been encircled. The original area of 780,000 mu of water for fish propagation has been reduced by half. On the 31 southern spawning grounds of the common carp, eight have been destroyed and 11 have been affected.

4. Because of industrial development, massive amounts of industrial waste fluids have not been treated before they were drained into rivers, lakes and seas. With the additional effects of petroleum and farm chemicals, the pollution of bodies of water is becoming more and more serious. The increase in the poisonous contents of heavy metals, cyanogen and benzene in bodies of water has directly affected the propagation of organisms for bait and fish and has caused fish to die in partially and seriously affected areas. The western Shanghai drainage system of the Shanghai segment of the Changjiang drains over 700,000 tons of waste water a day. The drained waste water forms a polluted belt several dozen meters wide and extends over 10 kilometers. It affects migration and reproduction of fish and causes mullet and eels to die en masse. Fish have a great ability to amass some poisonous substances. Via the food chain, the content of remnant poison in many aquatic products greatly surpasses the concentration in the body of water. In the Zhaoyuanjiang section of Songhuajiang, 60 percent of the fish contain mercury surpassing the 0.3 milligram/jin health standard for foodstuff. The highest content has reached 2.68 milligram/jin, directly harming people's physical health.

Strengthen Environmental Protection for Fishery

Environmental protection of fishery is an old problem and also a new topic. It is attracting increasing concern and attention. Since the founding of the nation, through massive surveys and studies, laws concerning protection have been drafted and certain measures of control have been taken and definite results have been achieved. But environmental protection for fishery is a broad issue, the situation is complex, and each department must coordinate with others. In the future, propaganda should be further strengthened to increase understanding of the important significance of environmental protection for fishery, conscientiously and thoroughly implement "the regulations for the protection of aquatic resources and fish propagation," "standards of water quality for fishery" and such regulations, strengthen comprehensive research of ecological systems in water regions, and establish some necessary specialized agencies to undertake environmental protection and management for fishery as a routine matter. At present, in view of the situation and the cause of destruction of our nation's fishery environment and fishery resources, the following work must be urgently done well.

1. When constructing water conservancy projects, blocking rivers and building dams, cutting off rivers and intercepting river flow, the protection of fishery environments and fishery resources must be taken into consideration. Corresponding measures to save the fish must be taken. At floodgates and dams that have already been built, where conditions are good, passages for fish must be added. Practice shows that building passages for fish while constructing floodgates and dams on migratory passages of some fish is an effective measure. Since the founding of the nation, our nation has built over 30 passages for fish. Of the more than 90 large and medium-sized floodgates and dams along rivers and near the sea in Jiangsu Province, there are 24 passages for fish. They have provided a definite benefit in assuring migration of fish and reviving fishery resources. After the fish passage of the Taibenzha in the Yangzhou region was opened in 1973, the results of fish passage have been good. Each year in April and May, large schools of eels and phrynosoma fry pass through and swim upstream to the lake to grow. Over only several years have various types of migratory fish emerged again in the Shaobehu and Gaobaohu at the upper reaches of the dam. Fishery production has increased on a large scale. In 1974 the total production of fishery of the four counties banking the lakes increased by over 2.7 million jin compared to 1972. The production of phrynosoma increased over 1.93 million jin.

The Gezhou Dam water conservancy hub presently being built will cut the Changjiang in half and will hinder the migration of sturgeons upstream for reproduction and destroy the largest spawning grounds of the four major species of black carp, grass carp, silver carp, and big head carp in the Changjiang. The flow of the river will be intercepted this year. According to information sources, concerned departments are still using all kinds of reasons to refuse to build passages for fish. This will seriously destroy the fishery resources of the Changjiang. The sturgeon and the Chinese paddlefish, which are key species being protected in our nation, will face the danger of extinction.

2. Encirclement of lakes to create farmland and filling in of ponds to plant food grains must be strictly prohibited. Fields already encircled and reclaimed but not producing sufficient crops must be returned to lakes in order to maintain the ecological balance of the lakes. Encircling the sea to create farmland must be carried out by suiting measures to local circumstances, by making overall plans and taking all factors into consideration. The principle of not destroying fishery environments and fishery resources should be followed. The grounds for the young and the fry of shellfish in beaches, grounds for fish culture and spawning grounds for coastal economic fish and shrimp, and grounds for bait must all be strictly protected. For example, the types of aquatic life of the coastal beaches of northern Jiangsu are special, the region is a centralized area producing clams. The shallow sea is also an important spawning ground of little yellow croaker, butterfish and Chinese herring, and it should be strictly protected.

3. The concerned departments must strengthen management and control of the "three wastes" to prevent harmful waste water from polluting water regions. Each region can strengthen the survey and monitoring of pollution of fishery environments according to the requirements of the "standards for water quality for fishery" and propose active preventive and control measures. As long as the leadership in each department emphasizes the problem and implements measures forcefully, the problem of pollution of water regions can be gradually solved. For example, the Guanting river system was originally affected by drainage of harmful waste water from the upper reaches and surrounding factories. The water quality worsened and massive amounts of fish died, attracting the attention of the leadership of the concerned departments in Beijing, Tianjin, Hebei and Shanxi. Starting in 1972, control of the "three wastes" has been actively carried out and good results have been obtained. At present, 30 percent of the total amount of harmful waste water can be retrieved along the entire river valley for purification treatment. The release of harmful substances of phenol, cyanogen, arsenic, chromium, benzene and DDT has been reduced by 53 percent. The water quality has greatly improved and the growth of fish is good.

4. Strengthen the Survey and Study of Fishery Environments and Fishery Resources

Since the founding of the nation, relatively large-scale surveys of fishery resources have been conducted within the nation, but the work is still not sufficiently deep and systematic. In the future, survey and research of the mutual relationship between ecological environments of fishery and fishery resources should be strengthened. The reserve of major economic fish species must be clearly surveyed, ways to maintain the ecological balance in water regions must be explored, and plans and measures to protect fishery environments and to develop and utilize fishery resources rationally must be drawn up. At the same time, comprehensive scientific surveys of the areas designated for the protection of nature must be launched in a big way. Our nation has many famous and precious aquatic animals, such as the lipotes vexillifer, the Chinese alligator, the lancelet, the dugong, the large salamander and the sturgeon. Because they were not protected for a long time, some species are near extinction. The urgent task at present is to examine carefully within a short period the distribution and number of precious aquatic animals and the ecological and environmental conditions of their living and reproductive areas, examine carefully the environmental conditions and resources of representative and typical ecological systems of water regions, determine key targets for protection, and zone new areas for the protection of nature to push the entire work of protecting nature forward.

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WATER PROTECTION ALONG BANKS OF LARGE RIVERS URGED

Beijing HUANJING BAOHU /ENVIRONMENTAL PROTECTION/ in Chinese No 1, 1981 pp 14-16

/Article by Jin Chuanliang /6855 0278 5328/: "Protect the Bodies of Water Along Major Rivers"/

/Text/ Along the two banks of our nation's largest river, the Changjiang, industries and cities have rapidly emerged and pollution of water quality has become more and more serious. Each day, the river receives over 26 million tons of polluted water from the industries and cities in the river valley. Although the natural flow in the main stream of the Changjiang is 100 times that of the total amount of drained polluted water so that the polluting substances are diluted and purified, nevertheless, during dry seasons the length of polluted water along the banks still constitutes about one-fourth the total length of the river east of Dukou. Especially in the water regions near key industrial cities, pollution is even more serious, forming pollution belts several dozen kilometers long and causing damage to fishery, industrial and agricultural production and the water supply to cities and towns. Similar situations also occur in other larger rivers. How to protect the water quality of large rivers has become a subject that needs to be solved urgently.

Implementing "Zero Discharge" and "total protection of the cross-section"

At one time there were two views concerning protection of the water quality of rivers. The first view required the polluting source (factory enterprises, cities and towns) to implement zero discharge. This view held that the rivers can keep their clean state only when the polluting source stops discharging waste into the rivers. Actually, such a requirement is irrational and impractical. The river itself has a certain ability to purify itself. Since ancient times, the river has always shouldered the responsibility of transporting and purifying wastes, only in the past the amount of waste was small, not enough to cause serious pollution. The self-cleansing ability is also a kind of resource and it should be properly utilized. Because this type of resource under definite conditions is very limited, it can be rationally utilized only under the assurances of strict control and management measures. Rational utilization of the self-cleansing ability of bodies of water is beneficial to conserving the cost of control and to promoting the control of the source of pollution. Although implementing zero discharge is a good aim and in individual professions it can be done, as a common requirement it cannot be realized. For example, in 1972, the United States drew up a federal pollution control law requiring that the pollutants be reduced to zero by 1985. For this, $18 billion was spent during the first 3 years. But because it was too costly, opposition to the requirement of zero pollutants arose. Therefore, in the near future in our nation, implementing zero discharge is not possible. On the other hand, natural bodies of water themselves contain various elements of a definite content which are necessary and beneficial to living matter and the human body. Therefore, the basic purpose of preventing pollution is to hold the various elements below the allowable standard.

The second view proposes the use of the average concentration of the water quality of the entire cross-section of the river for evaluation and for protection. This method is suitable for small branches and small rivers, but it is not suitable for guiding protection of water sources of large rivers. We can take the Changjiang as an example for explanation. The Changjiang's main flow has an annual average ratio of flow to pollution (the ratio of the amount of flow to the amount of polluted water entering the river) of more than 100 to 1; the water quality inspection value (indicating pollutants and poisonous substances) of the deep and broad flow in the center is basically "undetermined," but in fact, the effects of pollution along the river causing damage are still relatively serious, especially the damage to aquatic resources. According to statistics, aquatic production dropped by 45 percent from 1959 to 1975. In some cities, the quality of the water supply declined. Using the average value of the entire cross-section will not easily explain clearly the present situation of pollution of Changjiang. Also, if the inspection value of the pollutants of the deep and broad flow in the center approaches or reaches the water quality standard of the ground surface, or the average concentration reaches the water quality standards of the ground surface, then is it easy to imagine the polluted situation of the Changjiang? This method is not suitable for evaluating water quality and pollution of large rivers, and the protection of water sources should not take this as reference.

Water Regions Along the Banks Must Be Protected

The problem of water pollution means harmful and poisonous substances in the water environment have reached a definite content causing harm to physical health, economic development and the ecological systems of aquatic life. Therefore, we must start out from this point in the study of protecting water sources. The proposal to "protect the water regions along the banks" is based on the principle of combining prevention and control, taking into consideration human production and the position of water for living and safety of the aquatic ecological system centered around fish. Taking the protection of water regions along the banks as the goal of protecting large rivers is mainly determined by the following objective factors:

1. Water regions along banks are the major regions of water used by man for his economic and living activities. Whether it is a city's water source or water for industrial use or for agricultural irrigation, the water is mostly taken directly from water along the banks.

2. Fish and most of the aquatic life that have economic value all use the shallow water regions along the banks as the major activity grounds (living, seeking food, reproduction). In particular, in the shallow water regions along banks near the confluence of small rivers and estuaries, because of the rich sources of food, fish activities are more prosperous.

3. Polluted and waste water of cities and industries is mostly untreated and directly flows into the rivers from the banks or is carried by small rivers into the large rivers, thus seriously threatening the safety of water used by man and the existence of fish and such aquatic life.

4. In large rivers, the hydrological conditions in the water regions along the banks are frequently unfavorable to transverse dispersion of pollutants. The pollutants extend in the direction of flow within a definite area along the banks, forming a visible belt of pollutants. This is not only true in bodies of water but in the distribution of pollutants in sediments on riverbeds, the pollutants move downstream along the side of the bank from which the pollutants came.

5. On the basis of zoning the regions of protection of bodies of water along the banks, evaluation of water quality can be carried out. This will more accurately reflect the actual distribution of pollution of the water quality in the large rivers and the effects and damage caused. From this, a scientific basis can be proposed for controlling pollution and managing the water quality of rivers.

At present, the problem of pollution in large rivers is actually the problem of pollution of the banks that destroys the quality of water for economic use. Because the areas of water for economic use are basically water regions near the banks, therefore protecting the water regions along the banks has direct and practical significance to assuring the normal economic life of people and developing aquatic production. Also, as long as the water regions along the banks are protected well, the water quality of the entire river can basically be maintained in a good state. Therefore, protection of the water regions along the banks is a measure taking prevention as the main effort and is the key to protecting large rivers.

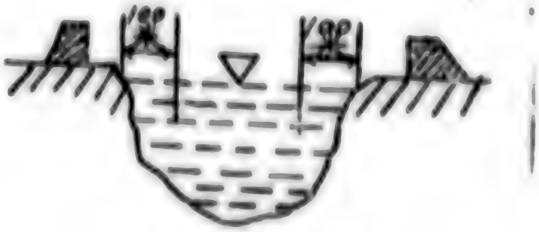
Zoning of Protective Zones of Water Along Banks

How large should a river be for consideration of zoning protective zones of water along banks? Because the hydrological conditions of each river are different, it is very difficult to establish a uniform standard. But preliminarily we believe that by taking the width and depth of the river into consideration and based on the situation of pollution of our nation's rivers, all rivers deeper than 5 meters and as wide as 400 meters with massive amounts of polluted water nearby being drained into them should generally have an established protective zone for water along banks. Larger lakes and reservoirs should also be included in considerations to establish protective zones for water along banks.

The width of the protective zones of water along banks should be determined by the actual situation of the water regions. According to information on the pollution belts formed along banks of some large rivers, information on the major activity range of fish in the shallow water regions along banks and related water quality standards for ground surface water, reference is made to Article 14 of the "sanitary standards for water used for living and drinking" which states: "Anchoring boats, swimming, fishing and netting and all activities that may possibly pollute the water source are prohibited within a water region surrounding the point where water is being taken for use; the region shall cover an area no less than 100 meters in diameter from that point, and visible signs are to be posted to mark out the area." According to the following two situations, opinions on preliminary zoning have been proposed:

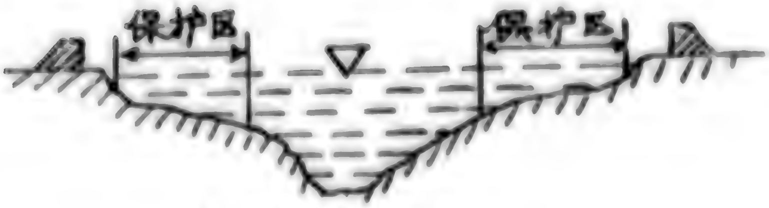
(1) In rivers with more precipitous banks extending to the riverbed and the depth of the water along the banks is greater than 2 meters, the width of the protective zone of water along the banks can follow the above principle and rule and can be temporarily set at 100 meters (see Figure 1).

(2) Water regions along river banks where the beach of the river is wide, and beachhead is constantly submerged and the depth of the water averages 2 meters, banks where fish reproduce, live and seek food and where such activity is prosperous, to protect aquatic resources, the width of the beach of the river should be taken as the width of the protective zone of water along banks (see Figure 2).



(示意图1)

Figure 1. 10 meters



(示意图 II)

Figure 2. Protected zone

Management of the Protective Zones of Water Along Banks of Rivers

After the protective zones of water along banks have been determined, the allowable load of pollutants within the protective zones of water along banks should be calculated from related water quality standards, the natural contents of the water of the water region, tests and computations of the self-cleansing ability and the mutual relationship between water quality and water quantity. Then, demands can be placed upon the source of pollution to limit the amount of waste released (including the total amount of polluted water released by the polluting source, concentration of the waste water released and the method of release of waste). The pollutants that are prohibited from being released should be eliminated by the unit producing the pollutants via measures of control. Disguised means of releasing such pollutants into the surrounding environment cannot be allowed. The unit and its leadership should be responsible for releasing more waste than is allowed and for causing pollution and damage. Water resources protection and management agencies and local environmental protection departments have the authority to inspect and supervise and to propose opinions according to the national environmental protection laws and related laws and when necessary they can bring the matter to court so that protection of rivers and water sources has a legal base and rules to follow and can be effective.

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PROBLEM OF SLIGHTING ANIMAL HUSBANDRY SAID IN NEED OF SOLUTION

Beijing NONGYE JINGJI WENTI [AGRICULTURAL ECONOMIC ISSUES] in Chinese No 5, 1980, pp V52-V53

[Article by Lin Xiangjin [2651 4382 6855]: "The Problem of Slighting Animal Husbandry in Farming Areas Awaits Solution"]

[Text] China's farming areas contain more than 1 billion mu of grass covered mountains and grassy slopes, 200 million mu of coastal beaches, and 1.5 billion mu of cultivated land, most of which can be used as agricultural by-products for the feeding of livestock. Furthermore, a more than 300 million agricultural workforce holds great potential for development of the livestock raising industry. The livestock industry in farming areas holds an extremely important position both in the national livestock industry economy and in the entire agricultural economy. Statistics show that about 90 percent of meat is supplied by farming districts. Not only are the more than 300 million hogs and more than 800 million poultry in the country virtually all in the farming districts, but a fairly large portion of herbivorous livestock are also in the farming districts. In 1978, for example, 40.73 million, or 57.6 percent, of the 70,726,000 cattle in the country were located in the farming districts of 19 provinces, municipalities, or regions. Of the 4,487,000 cattle slaughtered in the country, 2,573,000, or 57.3 percent, came from farming districts. Of the 1,366,000 beef cattle purchased throughout the country, 719,000, or 52.6 percent, came from farming districts. Of the 169,937,000 sheep on hand in the country, 63.78 million or 37.5 percent come from farming districts. A large body of facts show that it is very much necessary to give strict attention to development of the livestock industry in farming districts.

Nevertheless, in the minds of some leadership comrades in farming districts the livestock industry has no standing. In any discussion of agriculture, frequently thought is given only to grain. "Agriculture without livestock" ideas are quite pervasive. One comrade in Guangdong Province said that when there is a pork shortage in the city, some leadership comrades simply telephone to catch pigs. But there are more than 10,000 people at commune cattle veterinary stations in the province for 30 percent of whom no consumption grain quotas have been provided, and for whom the longterm problem of having to eat high priced grain has not been solved. We understand that in the Li Nationality and Miao Nationality Autonomous Zhou on Hainan Island there are 10 million mu of grass covered mountains and grassy slopes where rainfall is copious, the frost-free period long, and cattle feed abundant, but where for lack of serious attention on the part of leaders the number of cattle raised has steadily fallen since 1965.

Of the nine bureau chiefs in the Zhou Farm Bureau, not one is responsible for the livestock industry. In some places in the zhou, monthly pork supplies for each person must be brought in from Zhangjiang, which causes much mass displeasure. Agriculture is the foundation of the national economy. An economy without a livestock industry is an incomplete economy. This is a familiar doctrine. Agriculture is a weak link in the national economy and the livestock industry is a weak link within this weak link. This is also something everyone knows. Nevertheless, it has not received the serious attention it deserves from all echelons of leadership in farming areas. We believe that all that is needed is for the leaders to give serious attention to the livestock indsutry and to strengthening of leadership in the livestock industry for the role of the livestock industry in the national economy to manifest itself very quickly.

"No one in livestock raising." By this is meant no successors to the ranks of livestock industry technical cadres in farming areas, and it is a remark made by some leaders in farming areas who emphasize farming and slight livestock raising. The broad masses of livestock veterinarians and technical cadres struggle month in and month out, year in and year out on the front line of production in the livestock industry. Their work is very important and very arduous. Politically, professionally, and in their livelihood they receive kind attention from the leaders in most places.

But in some livestock industry organizations in some farming areas today, particularly in grassroots level units, insufficient attention is given to the building of such a corps, so much so that some people have asked to change their trade, and those who have made such a change have no desire to return. Those who have passed examinations to attend university do not want to study animal husbandry. A comrade in Guangxi said that technical cadres graduated in the same class from the same school will receive different wages and emoluments because of the different nature of their work. If assigned to an animal husbandry unit, they will receive no additional wages, welfare payments or subsidies, but if assigned to industrial or commercial units they will annually receive increased earnings of 220 and 180 yuan respectively. How could this but seriously impair development and strengthening of the animal husbandry technical corps! Additionally, because of poor labor security conditions and low wages, Guangxi Province was able to recruit only 400 people into animal husbandry during 1978 against a quota of 1,300, with the result that a general shortage of personnel exists at all levels of animal husbandry organizations in Guangxi Province. The facts show that in order to have a high degree of emphasis on, and vigorous development of the livestock industry in farming areas, and in order to gradually modernize the livestock industry, it will be necessary gradually to improve political treatment and living conditions, and to show concern for the growth and development of livestock industry cadres and the work corps.

If the livestock industry in farming areas is to be developed, it will also not do to have no special organization for it. We understand that presently only nine provinces in the country have established livestock bureaus, and that most of the other provinces and regions have set up livestock departments or sections within their agriculture and forestry bureaus. The same is true in a substantial number of counties. Such an arrangement would be workable if only such units were able to play a role. The problem is no attention to haveing them play their role, and not allowing them to take firmly in hand animal husbandry work. Therefore, people universally state that livestock organizations lack independence, which has a very bad effect on livestock work. For example, the lack of independence of livestock organizations in some provinces has brought about three "squeeze outs." One is the squeezing out of personnel. Usually when the province "gives attention to essentials," those selected out are livestock industry people. Second is the squeezing out of funds. Money requested from the Livestock Bureau of the Ministry of Agriculture in the name of the livestock industry is diverted by local financial authorities, and now no one dares ask the Livestock Bureau for money. Third is the squeezing out of work. Usually when the Provincial Bureau of Agriculture and Forestry convenes the OCP Committee Standing Committee to study tasks, grain, cotton, and oil-bearing crop discussions are extraordinarily detailed, but the livestock industry is given only 10 minutes in passing to speak, and problems cannot be solved. In one province, output value from the livestock industry stands at 12.4 percent; output value from aquatic products stands at only 6 percent of total output value, and output value from the forestry industry stands at 5 percent of total output value from agriculture, yet aquatic products have an acquatic products bureau, forestry has a forestry bureau, but the livestock industry alone is unable to set up a livestock bureau. One province has 9 million mu of grass covered mountains and grassy slopes that could be put to use, but because people are too few for the number of required tasks, never mind that the grass covered mountains and the grassy slopes are not put to use to provide feed grass for cattle, everyone is too busy even to innoculate hogs to prevent epidemic diseases. We believe thatin order to solve this problem of the slighting of livestock in farming areas, it is necessary to solve the problem of the management system and special agencies for the livestock industry.

Vigorous development of thelivestock indsutry in farming areas requires diligent darrying out of the party's program for walking on two legs, with equal development of livestock raising by the public and private sectors, determination to live up to policies, and reliance of the party's policies to arouse the socialist enthusiasm of the broad masses of cadres and people. At the present time policies permitting commune members to raise cattle as private individuals have not been sufficiently implemented in some places. Although the Central Committee has stipulated continued encouragement to commune members to raise cattle and sheep, there are still some misgivings in the minds of some comrades who feel that cattle are a means of production, which should not be privately raised. Leadership cadres in some province suppose, for example, that it is all right for commune members to raise sheep, but private individuals may not raise cattle. Some commune cadres also do not want to encourage commune households to raise cattle, fearing that they will be branded as capitalists in the future and suffer criticism; consequently, they do not dare support commune member private raising of cattle. Very clearly, these ideas and methods are inappropriate. When commune members raise cattle, so long as they do not hire people for exploitation and do not interfere with collective production, how can they be practicizing capitalism? Furthermore, regulations pertaining to price policies for various livestock and poultry products as well as the implementation of these regulations must also accord with objective economic laws to combine benefits for the state, the collective, and commune members alike.

In summary, our view is: The problem of slightint livestock in farming areas urgently awaits solution. The livestock industry in farming areas must resolutely press onward in order that the livestock industry in farming areas will play an active role in building the "four modernizations."

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NATIONAL

COMBINING FARMING, FORESTRY, LIVESTOCK SAID NECESSARY FOR BALANCE IN PRODUCTION

Beijing NONGYE JINGJI WENTI [AGRICULTURAL ECONOMIC ISSUES] in Chinese No 5, 1980 pp V9-V11

[Article by Yu Guoyao [0151 0948 5069]: "On the Issue of Readjustment to the Internal Structure of China's Agriculture"]

[Excerpts] Last year the area planted to grain throughout the country was less by more than 30 million mu than during the year before last, but as a result of efforts to plant in accordance with local conditions, to rotate crops in a sensible way, and emphasis on increases in per unit yeilds, total output nevertheless increased by more than 50 billion jin over the year before last. Cotton, edible oil crops, sugarcane, mulberry silkworms, and tea all increasec over the year before last. In addition to the increased output scored by grain and most economic crops, last year saw increases in output scored by grain and most economic crops, last year saw increases in vari ous kinds of livestock and poultry to mark a new reversal in the numerous years of slow development of livestock industry production. Last year 129 million fattened hogs were purchased throughout the country at a live weight per hog that was 12 jin greater than in 1978. The situation of many years in which the supply of pork in municipal markets was short was eased, and in many cities the supply of pork has opened up. Last year saw completion of more than 3 million mu of afforestation quotas as part of the "three norths" shelter forest belt, which effects the production of farming and livestock industries in 11 provinces and 200 countries. Some places have gradually stopped farming and returned to forests or to the planting of grass land where forests had formerly been destroyed to clear land, or where grass had been destroyed to grow grain. In short, last year's readjustment of the internal structure of agriculture began a change from sole concentration on the production of grain for an enlivening of the agricultural economy. A new atmosphere of simultaneous development of the five industries such as has not been seen in many a year has already appeared in some places.

Preliminary statistics show that China has 1.5 billion mu of cultivated land, 1.8 billion mu of forestlands, 4.3 billion mu of grasslands, 1.03 million square nautical miles of ocean surface, 810,000 square nautical miles of other marine fishing grounds, 7.4 million mu of sea water suitable for hatching, and 250 million mu of freshwater surface of which 75 million mu is suitable for hatching purposes. China also has more than 2,000 different kinds of plants that can supply food, more than 200 different kinds of spices and aromatic plants, more than 5,000 tree species, and more than 2,800 medicinal plants and animals, more than

1,200 kinds of birds, more than 1,500 kinds of fish, more than 600 kinds of wild beasts, and all kinds of amphibians and reptiles. The species of agricultural crops, domesticated livestock and fowl, and fruit trees are extremely abundant. This provides extremely beneficial conditions for the development of China's agriculture.

According to statistics, the world forest cover rate averages 22 percent, and generally speaking only when the forest cover rate is more than 30 percent and evenly distributed can it play a role in regulating climate. China's forest cover rate is only 12.7 percent, or equivalent to only half the world average. China stands 120th among more than 160 countries and regions of the world, and in terms of population it averages less than 2 mu of forests per person or only one-sixth the world average. It is one of the countries in the world with the least forests. China, however, currently has 1.2 billion mu of barren mountains suitable for forests and have not been afforested; it has a large area of sparse woods, bushes and cut-over lands in need of replanting and renewal; and it also has a large quantity of "four besides" [beside villages, roads, waterways, and fields] that have not been made green with trees.

In some agriculturally advanced countries, the livestock industry presently accounts for half the total output value of agriculture and may be as high as 80 or 90 percent of it. In China, it accounts for only 13.2 percent. China's grasslands total 4.3 billion mu, three times the area of cultivated land, of which the Hulunbuir grassland is one of the three foremost grasslands in the world. As a result of the lack of forests to provide protection to them, inattention to the building of the grasslands, indiscriminate cultivation and reckless overgrazing, the grasslands area that has become desertified and degenerated amounts to one-fourth the total grassland area. Output of grass has dropped from 30 to 50 percent of what it had been 10 years ago, and production by the livestock industry is still in a primitive and backward state of reliance on the weather for the growing of livestock. The output rate per hundred mu of grasslands is only 1/10 that of Australia, and 1/27 that of the United States. There are an additional 1 billion mu of grassy slopes on barren mountains in South China that could be used for the raising of cows and sheep, which are not now being used to the full.

The bad effects on agricultural production of the backward state of China's forestry and livestock industries has been revealed every more clearly. Because of the low forest cover rate, the area of degeneration and desertification of the grasslands has expanded, and the natural ecological balance has been destroyed to become prominently manifested in an increase in erosion and drought disasters. The eroded area of China has increased from the 1.16 million square miles of the period immediately following Liberation to 1.5 million square miles, or 16 percent of China's land area. Annual erosion is in excess of 5 billion tons, and the more than 40 million tons of nitrogen, potassium, and phosphate washed away about equals China's total output of chemical fertilizer. Annually more than 1.6 billion tons of silt flows through the Sanmen Gorges of the Yellow River, 400 million tons of which are deposited in the riverbed, thereby raising the height of the riverbed 1 meter every 10 years. Each year the silt at the mouth of the Yellow River extends from 2 to 3 kilometers farther out into the sea. Since the early 1960's, desertification along the ten-thousand-li-long windblown sand line in the mouth has proceeded at a rate of 20 million mu annually. As a result of the reckless timbering and denudation in the upper reaches of the Yangtze River, the destruction of forests to clear land for agriculture, some people are already warning that "the Yangtze River is in danger of becoming a second Yellow River!" In Jiangxi Province in the lower reaches of the Yangtze, the channel for water transportation is 800 kilometers shorter than in 1963, and in another 1,100 kilometers, tonnages have been cut in half. During the period immediately following Liberation, China's desert area was 1.6 billion mu, which has now expanded to 1.9 billion mu. Within a period of 30 years, the desertified area has increased by 20 percent. Meterological units say that as compared with the 1950's, in some places the number of days when the sands blow have increased, quantity of rainfall has decreased, droughts are more frequent, relative humidity has declined. Agricultural production is facing a natural environment that is worsening daily. Annually, 400 million mu of China's 1.5 billion mu of cultivated land is disaster prone and 100 million mu is striken with disaster. Because of a lack of forests, there is no firewood to burn, so all stalks and stems are burned. This plus the non-development of the livestock industry and the resultant lack of barnyard manure means the organic content of large areas of soil has dropped to around 1 percent. In presently advanced agricultural countries, organic content of the soil is around 3 percent. In most parts of northwestern China, the organic content of the soil is only around 0.6 percent. Numerous places, which historically had been luxuriant forests and abundant grain, copious water and lush grass, have become barren lands.

The above situation shows that only if we leap out of the set pattern of sole emphasis on farming, and change our neglect of the forestry and livestock industries for a genuine combination of farming, forestry, and livestock raising that are mutually supportive will we be able to protect and make full use of China's natural resources for agriculture and have high speed production. This is a fundamental problem in the building of a rational agricultural structure in China that must first find solution.

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IMPROVED AGRICULTURAL MACHINERY MANAGEMENT URGED

Beijing NONGYE JIXIE XUEBAO [JOURNAL OF AGRICULTURAL MACHINERY] in Chinese No 4, Dec 80 pp 102-106

[Article by Zhu Peiwei* [2612 1014 1983] of the Ministry of Agricultural Machinery: "Academic Discussion on Agricultural Mechanization; Strengthening Management of Agricultural Machinery Is an Urgent Task"]

[Text] At present, our nation's agricultural machinery industry is being linked to efforts to reform the economic system and to implement the four point policy of readjusting, restructuring, consolidating and improving.

Reorganization is being carried out according to the principle of coordination and cooperation of specialization on the basis of adjusting the internal proportion of agricultural machinery. The emphasis of the agricultural machinery industry is on tapping potential, renovation, reformation, and improvement of product quality. In this situation, how the Department of Agricultural Machinery Management and Utilization can manage and utilize the presently available agricultural machinery well and fully develop its function in agricultural production is of especially great significance. This article presents some superficial views on several problems in strengthening management of agricultural machinery at present for study and discussion.

Objective Necessity of Strengthening Management of Agricultural Machinery

The Central Committee of the Chinese Communist Party pointed out in its "Decision on Some Questions Concerning the Acceleration of Agricultural Development": Realization of agricultural modernization requires actively launching the work of agricultural mechanization according to plan. To launch agricultural mechanization, the agricultural machinery manufacturing departments must be relied upon to provide massive numbers of agricultural machinery of good quality, low priced and suitable to the demands of our nation's agricultural technology on the one hand, and on the other hand, the function of such machinery in agricultural production must be fully developed. According to the actual situation in our nation at present, we believe that within a short time, the emphasis in agricultural mechanization should be on managing and utilizing the presently available agricultural machinery well. The reasons are:

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* We thank Comrades Song Shuyou [1345 2885 0645], Dong Yimin [5516 0001 3046], Xu Wenlan [1776 2429 5695], and Hu Zhengji [5170 2973 1015] for providing their valuable opinions for this article.

First, our nation's agricultural machinery industry is in a stage of readjustment and reorganization. The major problem of the agricultural machinery industry at present is that the internal proportions are not well coordinated. In particular, livestock industry machinery has always been the weakest link, and the emphasis is still on major equipment, while accessories are neglected. The agricultural machinery industry is widely distributed, batch production numbers are small, the cost is high, and the quality is poor. Also, the technological forces are weak, the productive organization is backward, the level of "three izations" is still low. And the production, supply and sales of the agricultural machinery enterprises are not linked. On the one hand, the supply of good quality agricultural machinery products urgently needed in agricultural production cannot meet the demands. On the other hand, some agricultural machinery products of lesser quality and high price are accumulating in large numbers. Reviewing the actual readjustment for over a year in our nation, for the agricultural machinery industry to start "small and become complete", to start "big and become complete", to be coordinated with specialization, to realize and develop superiority, to protect and to compete, and to push for unity, the situation is more complex and difficult than originally thought and the time required will be longer than predicted. Therefore, in the near future, the amount of agricultural machinery to be produced will not increase greatly. The emphasis should be placed on presently available agricultural machinery.

Second, at present the degree to which the various agricultural sectors in our nation are equipped with agricultural machinery has increased greatly. The nation now has over 2.3 million units of various types of farming tractors, over 5 million units of drainage and irrigation machinery, and over 3 million units of processing machinery for food grains, cotton and edible oils. The total power of our nation's agricultural machinery has reached 180 million horsepower, and each horsepower averages 8.3 mu of cultivated land. In addition, there are also a large number of machine-drawn farm tools and machinery for plant protection, field operations machinery, transport machinery and other mechanized and semimechanized farming tools. At present, the productive value of farm machinery of the communes and brigades of farm villages constitutes nearly one-third of fixed assets. In many communes and brigades in farm villages, the productive value of agricultural machinery already constitutes over half the value of fixed assets. Agricultural machinery has become an important part of our nation's agricultural productivity.

Third, according to our nation's present economic conditions, except for the establishment of commercial food grain bases in the Northeastern region where the state has given more funds to support mechanization, the state cannot provide massive funds to support agricultural mechanization. At present, the communes and brigades in farm villages are developing diversification and commune and brigade industries and accumulating capital. But this requires time. Nationally, the development of diversification in our nation's agriculture is still relatively slow. Take Heilongjiang Province as an example: in 1979, the total value of the entire province's agriculture and sideline industries was 6 billion yuan. Of the total productive value of agriculture and sideline industries, the productive value of agriculture was 74.4 percent; forestry, 3.9 percent; livestock industry, 12.5 percent; sideline industries, 9 percent; and fishery, 0.2 percent. During the 10 years from 1969 to 1979, the average income from diversification constituted only 15 percent of the total income of agriculture and sideline industries. In one-third of the cities and counties of the province, diversification constituted less than 10 percent. It can be seen that the development of diversification in agriculture is still under a handicap. Therefore, in the near future, from the standpoint of state support and the ability of the communes and brigades to obtain capital by themselves, the ability of our nation's collective economy to purchase agricultural machinery will not achieve any breakthroughs.

Fourth, in the supply of energy sources, it is urgently necessary to tap the potential in managing and utilizing the presently available agricultural machinery well. Everyone knows that agricultural machinery is the department that consumes the largest amount of diesel fuel, and is responsible for 40 percent of the total national annual consumption. On the basis of the present progress in developing energy resources in our nation, within the next few years the shortage of energy supply in our nation will not be greatly improved. Now, our nation's agricultural machinery power increases about 15 million horsepower each year, but the supply of diesel decreases each year. If we calculate the supply of diesel per horsepower, in 1978 it was 73 jin, in 1979 it was 63 jin, and in 1980 it was only 53 jin. Therefore, in view of the energy supply, management of agricultural machinery must achieve the maximum operational results by consuming the least amount of energy, that is, tapping the potential to realize high efficiency, superior quality, low consumption and safety.

Fifth, from the standpoint of present agricultural production, the function of presently available agricultural machinery must be urgently developed fully. Extensive practice shows that agricultural machinery not only has importance in serving to improve the quality of planting, take advantage of the seasons, keep to farming schedules, resist drought and drain flooded areas, and prevent disease and insect pests, it also performs a lot of tasks in medium and short distance transportation for agriculture under our nation's present conditions. Thus, it is also important in serving to improve labor conditions and reduce labor intensiveness. In addition, mechanization also provides massive labor resources to develop diversification and commune and brigade enterprises. This is also of significance in consolidating the collective economy so that the commune members can become richer quickly.

It can thus be seen that managing and utilizing agricultural machinery well to fully develop its function in agricultural production is an urgent task in our nation's agricultural mechanization at present.

The Potential of Managing and Utilizing the Presently Available Agricultural Machinery Well Is Very Great

Agricultural machinery management is a specialized management science. It uses management means to fully tap the potential of presently available agricultural machinery. Extensive facts prove that there is a difference in the results of good management and poor management of agricultural machinery at an agricultural machinery station under the same conditions. The agricultural machinery station that is managed well can fully develop its potential. The agricultural machinery station that is not managed well cannot fully develop its potential, and the burden of the farmers will be greatly increased.

Where is the potential manifested? Nationally, because management work did not catch up and for similar reasons, the increase in the amount of agricultural machinery in our nation and the actual results of "mechanization" do not match up. For example, a comparison of 1965 and 1979 shows that the number of large and medium-sized tractors in our nation increased 8 times, the number of small tractors increased 421 times, the amount of large and medium-sized machine-drawn farm equipment increased 5 times, and the amount of farm equipment drawn, by small machines increased over 300 times, but our nation's machine-tilled area increased only 1.7 times. Furthermore, the average comprehensive amount of operation per horsepower of our nation's farm tractors dropped year after year. In 1965, the amount of operation per horsepower reached 244 standard mu, the highest ever. By the end of 1979, the amount of operation per horsepower was only 171 standard mu. Now, the area tilled by machine throughout the nation constitutes only 42 percent of the total area of cultivated land. The area sown by machine constitutes only 13 percent of the sowing area of dryland crops. The area harvested by machine constitutes only 2.6 percent of the sowing area of food grain crops. The area transplanted by machine has always remained at a low level. Up to the end of 1979, it constituted only 0.7 percent of the total area of paddy fields transplanted. The reasons for the continuous increase in the amount of our nation's agricultural machinery while the level of "mechanization" has not increased for a long period and has remained unstable are many, but poor management and operation are undoubtedly among the most important reasons.

From the point of view of the locality and the units, the development of our nation's management of agricultural machinery is also very uneven. In some places, the percentage of agricultural machinery in operating condition has reached over 90 percent, but in many other places it is still only 50-60 percent, and even lower. The operating efficiency of some machinery has reached an average of over 300 standard mu per horsepower, but in many other places it is still less than 100 standard mu. The three basic costs (fuel, maintenance, and management costs) of operation of machinery per standard mu averages only 0.30-0.40 yuan in some places, but in other places, it has reached over 1 yuan. In some places, the consumption of fuel per standard mu is about half a jin, while in other places it has reached over 1 jin. We have calculated that if the percentage of large and medium-sized tractors in operating condition throughout the nation could be increased by 10 percent from the present 70 percent, then the result would be equivalent to an increase of several tens of thousands of tractor units throughout the nation, and in general would be equivalent to the number produced by the Luoyang Tractor Plant in 2 years.

From the viewpoint of advanced mechanized vehicle crews, the potential is even greater. The national labor model, special tractor operator Xu Yongshan [1776 3057 1472] of the Jilin Province mechanized vehicle crew, operated a Dongfanghong-75 tractor for 10 years safely and worked 121,200 standard mu, with an average consumption of fuel per standard mu of 0.64 jin, a cost per standard mu of 0.45 yuan, and a repair cost per standard mu of only 0.39 yuan. Recently, the Ministry of Agricultural Machinery organized technical personnel of concerned departments and units to conduct a technical evaluation of the mechanized vehicle crew of Xu Yongshan and perform some calculations after evaluation. They came to the conclusion that if everyone could be like Comrade Xu Yongshan, 300,000 tons of diesel fuel could be conserved a year by the nearly 200,000 units of Dongfanghong belt-driven tractors and over 2 million units of small and medium-sized tractors, over 400 million yuan could be saved in repair costs, and over 1.1 billion yuan of costs could be saved.

Extensive facts prove that by strengthening management of agricultural machinery and fully developing the potential of presently available agricultural machinery, many contributions can be made to promoting increases in agricultural production and harvests and to enriching the farmers quickly. Two different types of examples are given here as explanation:

One example is the Fujia Brigade of the Enyu Commune in Yushu County, Jilin Province. Prior to 1976, this brigade produced a unit yield of only some 300 jin of food grains and beans. Average per capita income was about 70 yuan. Since development of agricultural mechanization and because management of agricultural machinery was strengthened, the function of agricultural machinery was fully developed, liberating a massive labor force, and there was overall development in agriculture, forestry, livestock production and sideline industries. Now, this brigade has basically realized mechanization of tilling, raking, sowing, intertilling and threshing in the fields. In 1979, the per mu yield of food grains and beans reached over 860 jin, a onefold increase in 3 years. The brigade sold to the state 6 million jin of commercial food grains, a twofold increase in 3 years. Mechanization freed half the labor force to engage in industrial and sideline production. Now it operates 10 plants and 4 workshops. In 1979, the total productive value of its industries and sideline production was 584,000 yuan, and each commune member received an average of 306 yuan. Each family had an average of 800 yuan of savings, and the highest was 7,300 yuan. Of the entire brigade, 62 percent of the families had savings of over 1,000 yuan.

The other example is the Jinhong Brigade of Bailuo Commune in Jianli County, Hubei Province. This brigade was originally a poor brigade. In 1970, total family property amounted to only over 127,000 yuan, per capita distribution was only 70 yuan. Starting in 1971, the brigade gradually achieved mechanization of major farmland operations, emphasizing drainage and irrigation. Now it has 560,000 yuan in fixed assets of farm machinery, over 900 horsepower, and each horsepower works an average of 5 mu of cultivated land. In recent years, because management of farm machinery was strengthened, the function of farm machinery has been fully developed, the ability to resist natural disasters and damage has been greatly increased and agriculture has continued to produce increased yields. In 1979, major floods and drought unprecedented in the past 30 years occurred. But the yield did not decrease and the best harvest in the history of the brigade was achieved. Total yield of food grains reached 2.379 million jin. Converting the yield of cotton and tallow to food grains showed that each labor force produced an average of over 9,300 jin of food grains, double that of 1970. This brigade has rich resources, but previously it lacked power machinery and the superiority could not be fully developed. Mechanization provided the labor force opportunities to open up new productive channels. Now, 34 percent of the total labor force is engaged in industries and sideline production. Income has reached 330,000 yuan, an increase of 15 times over that in 1970. In 1979, total income from agriculture, sideline production and industries was 1.17 million yuan, and the per capita average productive value totaled 673 yuan, equivalent to 448 U.S. dollars. The average per capita income was 305 yuan.

The economic development of the two brigades described above cannot simply be attributed to the function of agricultural machinery, but it is obvious that without mechanization the achievements would not be possible.

Key Measures To Strengthen Management of Agricultural Machinery

What are the main criteria for judging whether agricultural machinery management work is good or not? What measure can be used? According to the experience of the localities, I believe it should include the following aspects: first, whether the use of agricultural machinery is highly efficient, superior in quality, safe and consumes less fuel; second, whether the level of "mechanization" has improved greatly; third, whether agricultural machinery has made many contributions to increasing agricultural production and harvests and enriching the farmers quickly; and fourth, whether the greatest economic results have been achieved using the minimum of machinery investment. These aspects must be considered comprehensively. They cannot be separated and isolated as standards of measurement.

To manage and utilize the presently available agricultural machinery well, to fully develop the function of presently available agricultural machinery in production, at present, besides conscientious implementation of the spirit of the national working conference on agricultural machinery management held at the beginning of this year, the work in the following aspects must also be given special emphasis and be grasped firmly.

First, training of technical forces in agricultural machinery must be strengthened. This is a strategic measure and it must be undertaken conscientiously and well. At present, building up our nation's mechanized teams in agriculture, whether in quantity of quality, cannot satisfy the needs. Among the masses of agricultural machinery management cadres, there are many who lack specialized knowledge, who are unfamiliar with the operation, and this situation is extremely out of tune with the present construction of the "four modernizations." Among the nation's tractor operators, there are less than two persons for each tractor on average, of whom one-fourth are unlicensed operators. This is the main reason for the continuous occurrence of mishaps to our nation's agricultural machinery. Among the licensed tractor operators, there are also many who know only how to transport but cannot perform farmland operations. To change this situation rapidly, to adapt to the needs in strengthening the work of agricultural machinery management at present, on the one hand, reform of the teams of cadres engaged in agricultural machinery management must be firmly undertaken, so that the backbone team that insists on following the road of socialism, that has specialized knowledge, that has organizational and leadership capabilities and that has many years of experience and strength can be promoted to the leadership posts. The present agricultural machinery management cadres who lack specialized knowledge should be given training to encourage them to study their duties well. On the other hand, training of technical forces in agricultural machinery must be firmly undertaken. At present, there must be special emphasis on quality of training. Trained tractor operators must all "understand the three aspects and know the four aspects" (i.e., understand the principles of the structure of the machinery, understand regulations of machinery management, understand agricultural production techniques; know the operation, know maintenance, know how to eliminate breakdowns, and know how to perform farmland operations). The present unlicensed tractor operators must be retrained by various means to improve their skill so that they can meet the qualifications within a short period. Various farm machinery personnel must be tested and graded and be given varying wages according to the different levels of competence. The exceptionally good operators must be given the title of special grade tractor operators to establish a sense of honor and to encourage agricultural machinery operators to continuously improve their technical level.

Second, agricultural machinery stations must engage in businesslike operation. At present, the operation of agricultural machinery by the people's communes in farm villages in our nation is under the three-level ownership of the commune, the brigade and the production team and the three-level operation system. Up to the end of 1979, the nation already had over 31,200 commune agricultural machinery stations and over 116,500 brigade agricultural machinery stations (brigades), and there were 1.06 million production teams owning hand-operated tractors (a few were medium-sized tractors). To manage and use agricultural machinery well in the various forms of operation, special emphasis should be placed on maintaining the autonomy of the commune and brigade agricultural machinery stations at present, and the unhealthy trend of whimsical egalitarianism and indiscriminate transfer of resources must be firmly stopped in order to lessen the various irrational burdens upon the agricultural machinery stations, and commune and brigade agricultural machinery stations must implement businesslike operations. The agricultural machinery stations must be operated well, like an enterprise. They must not be regarded as a supplementary and auxiliary unit unnecessary to the communes and brigades. The agricultural machinery stations of the communes and brigades must create proper conditions, implement independent accounting, bear their own profit and loss, and use economic methods to manage agricultural machinery. The agricultural machinery stations must establish a contractual operation system with the basic accounting units to formalize by contract the duties to be borne by each. The economic benefits of the operators of agricultural machinery stations must be linked to the various tasks they have completed to implement the method of more rewards for more work, less rewards for less work, no rewards for no work, and reward and encouragement for surplus work. The attitude that it is all the same whether work is done or not, eating out of the common pot and engaging in egalitarianism must be firmly opposed. Only in this way can the enthusiasm of the broad masses of agricultural machinery personnel be fully mobilized to manage and utilize agricultural machinery well, fully develop the function of presently available agricultural machinery in production, and realize the use of minimum investment to obtain maximum economic results. Businesslike management implemented for more than 2 years by the 38 machinery teams of the Zhangqicun Brigade of Nanpi County, Hebei Province, showed visible results. Up to the end of 1979, the percentage of draining and irrigating machinery of the 38 machinery teams in operating condition had increased from over 70 percent before implementation of businesslike management to over 90 percent. Average consumption of fuel for irrigating each mu of land dropped from 1.01 to 0.67 jin. The cost dropped from 0.50 to 0.30 yuan. The machinery team of the Zhangqicun Brigade has implemented businesslike management for over 2 years, repaired over 10 types of components such as newly bent shafts and water pump shafts totaling over 180 units themselves, and in addition it also made such spare parts as speed governors. A total of over 5,000 yuan was saved.

Third, management of the four aspects of planning, machinery operation, finance and labor of the agricultural machinery stations must be strengthened. In recent years, our nation's agricultural machinery management battlefront summarized the experience to strengthen the four great managements of the agricultural machinery stations according to the practice of agricultural machinery management work in the localities. Practice shows that this is very important in strengthening our nation's agricultural machinery management work. We must summarize further and make improvements on the basis of this experience to gradually make it perfect. Of the four major management aspects, management of planning is the central link. It must be closely combined with the agricultural production plans of the communes and brigades.

Monthly, seasonal and annual plans for the operation of agricultural machinery for the station must be drawn up. The operational plans for agricultural machinery should include indexes of operation, quality of operation, total amount of operation (where the amount of agricultural operation is expressed in percentage), record of the three percentages (percentage of machinery in operating condition, percentage of absenteeism, and percentage of the efficiency of each shift), amount of operation per horsepower, fuel consumption per mu, and cost per mu. Planned indexes must be advanced and reliable and must allow leeway. During the course of carrying out the plan, the actual situation must be used for periodic revision. After the operating plan of the agricultural machinery station and the contract with production teams have been established, the obligations must be assigned to each mechanized vehicle crew for completion. Machinery management is the basis of agricultural machinery management. It is the basic assurance of realizing high efficiency, superior quality, low consumption and safety. These must be undertaken conscientiously and well (these will be discussed separately in the following section of this article). Financial management must conscientiously carry out the policy of thrift management of the station, and it must establish the "four accounts" (cash flow account, total account, detailed accounts, and material accounts) and the "three ledgers" (cash, material inventory, and fixed assets). A cash management system must be implemented to strictly realize planned income and expenses, fixed consumption, and cost basis for operations. Costs include six items: fuel costs, maintenance costs, major repair costs, depreciation of fixed assets, wages for operators, and management costs. Each mechanized vehicle crew must conscientiously record a working log of the tractor, strictly implement single machinery cost accounting as a reference for evaluating the machinery by the station. In labor management, the post responsibility system of "five quotas and one reward and replenishment" must be implemented (i.e., fixed quota of machinery, fixed personnel, fixed tasks, fixed operating quality, fixed fuel consumption and maintenance costs; reward for surplus and conservation, reduction of salary for less production and overexpenditure). Wages of operators should be based on the principle of "each performing as much as he can and each rewarded according to labor performed" and they should be determined rationally according to work evaluation and evaluation by grade. Egalitarianism is opposed. Wages can generally be work points added to supplements. When conditions are good, a wage system can be implemented, but things must not be done in an inflexible way. Competition in ideology, work efficiency, operational quality, low consumption, safety and similar socialist labor competitions can be initiated among the mechanized vehicle crews of the station, and the mass movement to compare, to learn, to catch up, to help and to surpass can be initiated.

Fourth, the work of machinery management must be conscientiously done well. Technical maintenance, fuel management, safety monitoring and construction of garages and fields of the stations must be firmly undertaken in accordance with the requirements of the regulations on machinery management. At present, special emphasis must be placed on firmly undertaking technical maintenance and fuel management. Strengthening technical maintenance has great significance in assuring that vehicles are constantly in a good technical state and in improving the percentage of agricultural machinery in operating condition. In recent years, on the basis of the general survey of agricultural machinery of all localities, a maintenance grading competition has been held. This was important in serving to strengthen technical maintenance work. In the future, the experience must be conscientiously summarized and work must be launched concretely. Technical maintenance must follow the policy that "prevention is more important than treatment, maintenance is more important than repair". It must "eliminate three leaks" (eliminate oil leaks, gas leaks, and water leaks). It must keep "four things clean" (clean oil, clean water, clean gas, clean vehicle) and "five things in good condition" (readjustment, lubrication, firmness of vehicle, meters, and electrical equipment in good condition). At present, the technical maintenance cycle and the basis of caring for tractors at all localities are not uniform. Some judge the necessity for maintenance by operating hours, some by the amount of fuel consumed, while most of the agricultural machinery stations of communes and brigades do not place enough emphasis on technical maintenance. Except for maintenance by shifts, the machinery is maintained only once before and once after the busy farming season. In the future, the regulations for machinery management must be continually emphasized and implemented so that the machinery can be maintained in good order and at fixed intervals. In fuel management, the work of fuel conservation and fuel purification must be firmly grasped. A good job of fuel purification can prolong the useful life of the motor, reduce the wear of the three major precision coupled components of the fuel system, reduce the supply of component parts, and reduce maintenance costs. To make sure that this work is done well, diesel oil must be left for 48 hours to allow impurities to settle and the oil should be strictly filtered. When adding fuel, the cleanliness of the oil pipe, oil tank and surrounding environment must be taken into consideration to assure that the oil is clean. In addition, the work of fuel conservation must also be conscientiously undertaken. The key measures are: change bucket fueling to sealed fueling; make sure the tractor does not leak oil, change the present situation of tractors that "leave a pool of oil when they stop and leave a line of oil traces when they travel." The procedures of agricultural technology must be improved. Multiple operations must be launched and the method of less tilling should be popularized. Reduce the chances for the tractor to make empty runs and empty turns, reduce fuel consumption, launch new projects of renovation and fuel conservation such as preheating diesel fuel, drawing gas to conserve fuel, using inertia to increase compression, using double pipe air intake, etc.

Fifth, appropriate assignment of machinery must be emphasized. This means that different types, models and numbers of agricultural machinery must be correctly combined on the basis of rational selection of the model and accessories according to the natural and economic conditions of different regions. Correct assignment of machinery is an important basis for rational investment and use of agricultural machinery. It must be firmly grasped as an important task in agricultural machinery management work. For example, at one region and in one unit, how can the proportion of wheeled tractors and chain-driven tractors be rationally determined by suiting measures to local circumstances; how can the proportion of large, medium-sized and small tractors be determined; how can the proportion of the main equipment and the accessories be determined; how can the proportion of mobile operating machinery and stationary operating machinery be determined, etc? In this way, the blindness apparent in investing and using machinery in the past can be overcome, the needs of agricultural production can be satisfied, and the maximum economic results can be gained with minimum investment in machinery.

The various measures described above are proposed in accordance with the actual situation in our nation at present to strengthen agricultural machinery management work. In the present work of agricultural mechanization, we should pay attention to seeking speed in management, to tapping potential in management, and only in this way can the function of the presently available agricultural machinery be fully developed to contribute appropriately to hastening our nation's agricultural development.

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BRIEFS

NEW AGRICULTURAL HISTORY JOURNAL--Nanjing, 16 May (XINHUA)--A quarterly "Agricultural History of China" compiled by the Society of the Chinese Agricultural History and the Chinese Academy of Agricultural Sciences started publication in Nanjing, capital of Jiangsu Province, this week. Publication of the journal is expected to further systematically study China's long agricultural history. The journal has an English table of contents and will be available abroad. The first issue, 96 pages long, carries 17 articles. One is written by Liu Ruilong, vice minister of China's Agricultural Ministry. Others by noted agricultural historians and experts include "History of the Importation of Cotton and Textiles Before the End of Ming Dynasty" by late Professor Shi Shenghan, "Water in Development of Chinese Agriculture and Its Historical Problems Related to Irrigation of Farmland" by late Professor Wang Yuhu, and "The Bases of Intensive Cultivation in Dry Farming" in China by Sachio Kumajiro, a noted Japanese agroeconomist. [Text] [OW201427 Beijing XINHUA in English 1210 GMT 16 May 81]

NEW SWEET POTATO STRAIN--Nanjing, 16 May (XINHUA)--"Xushu 18", a new strain of sweet potato developed by Sheng Jialian, deputy director of the Xuzhou Institute of Agricultural Sciences in Jiangsu Province and his coworkers at the institute, was grown on 470,000 hectares of farmland in China in 1980. The new strain replaces the "Shengli 100", a foreign strain. Fresh potato yield of "Xushu 18" is 22.1 percent higher than "Shengli 100", and dried potato yield is 39.8 percent higher. It is also resistant to potato rot. The "Xushu 18" is being grown mainly in Jiangsu, Shandong, Anhui, Henan, Hebei and Hubei Provinces. Sheng Jialian was awarded a first prize last year by the Ministry of Agriculture for his achievement. [Text] [Beijing XINHUA in English 0238 GMT 16 May 81 OW]

DROUGHT RELIEF--Beijing, 19 May (XINHUA)--Continual rains fell from 13 to 18 May in northern China, bringing relief from a long stretch of dry weather. Precipitation amounted to from 10 to 35 millimeters, the Central Meteorological Bureau reported. The rains will help the wheat crops resist searing winds and stimulate the growth of spring-sown crops, including maize, barley and legumes. Areas partly or greatly benefiting are: Xinjiang, Gansu, Ningxia, Qinghai, Shaanxi, Shanxi, Henan, Anhui, Jiangsu, Shandong, Hebei, Beijing, Tianjin, Inner Mongolia, Liaoning, Jilin and Heilongjiang. [Text] [Beijing XINHUA in English 0723 GMT 19 May 81 OW]

SUNID CAMELS RANKED TOP BREED--Hohhot, 20 May (XINHUA)--In a national livestock survey, the Sunid camel ranked as China's finest breed, according to the Animal

Husbandry Bureau of the Inner Mongolia Autonomous Region. The two-humped Sunid camel is native to the desert regions of north and northwest China. Sunid camels number 63,000 head of the nation's total two-humped camel population of 600,000. Sunid camels are heavier and larger than other camels, a spokesman of the bureau said. The average weight of the male is over 700 kilograms and that of the female is 632 kilograms, 150 to 180 kilograms more than ordinary camels. The Sunid camel produces 18 percent more hair and 30 percent more meat than an ordinary camel. Each camel can produce an average of 59 kilograms of fat, 42 percent above that of an ordinary camel. Sunid camels are well adapted to extreme weather conditions. An emaciated camel tied to a rock would live more than 70 days without water or fodder supplies, he said. The survey also showed that male Sunid camels have an average life span of 42 years while female camels live an average of 30 years. [Text] [Beijing XINHUA in English 0715 GMT 20 May 81 OW]

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BRIEFS

CORN PEST CONTROL--Beijing, 9 May (XINHUA)--A plant protection station on the outskirts of Beijing has evolved a simple method suitable for large-scale mechanized production of trichogramma, a parasitic wasp used extensively to control maize borer pests. The deputy director of Beijing Municipal Agricultural Bureau, Zhang Yanli, said today that county-run plant protection stations near Beijing breed tussah moths for their eggs. The eggs are then used as the host for trichogramma egg parasites and the subsequent generations of trichogramma are used to control maize borer. One-third of the maize fields around Beijing have been "seeded" with trichogrammas, which are as fine as the point of a needle and which can live on more than 400 types of insect eggs. They are effective against pine caterpillars, pink boll worms, rice leaf rollers and cutworms. [OW101405 Beijing XINHUA in English 0733 GMT 9 May 81]

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FUJIAN

SIMULTANEOUS DEVELOPMENT OF GRAIN PRODUCTION, MULTIPLE UNDERTAKINGS URGED

Beijing NONGCUN GONGZUO TONGXUN [RURAL WORK NEWSLETTER] in Chinese No 3, 5 Mar 81 pp 18-19

[Article by Xu Ya [6079 0068]: "Grain Production Should be Developed Simultaneously with Multiple Undertakings"]

[Text] Since the "gang of four" was smashed to pieces, Fujian Province has registered a gain in agricultural production for 4 consecutive years. Agricultural production has taken on a new look, especially during the last 2 years when the province, in line with the spirit of the Third Plenum of the CCP Central Committee and in conformance with the guiding principles and policies laid down by the CCP Central Committee as regards agricultural development, made the most of its strong points and adopted firm and positive measures consistent with local conditions in making readjustments in the structure of the agricultural sector under the leadership of the government. During those 4 years, food grain production increased by 3.4 billion jin. The annual rate of increase came to 6.4 percent, or almost twice the average of 3.3 percent registered by the nation since the establishment of the republic 31 years ago. The rate of increase in the production of cash crops has been even sharper. In 1980, sugar cane production averaged 5 tons per mu, while the total production showed an increase of 94.62 percent over the figure for 1976. The production of cane sugar during the 1979-1980 sugar refining season came to 375,000 tons, or 85.6 percent more than the figure for 1975-1976 season. In 1980, the production of rapeseed increased by 1.7 times, tea by 43.02 percent, cured tobacco by 42.35 percent and fruit by 15.57 percent compared to the figures for 1976. During those 4 years, 10 million mu of land had been planted to trees. The rate of forest coverage reached 39.5 percent. During each of those 4 years, the quotas on lumber production and on state procurement of lumber were fulfilled. At the end of 1980, the number of pigs in inventory exceeded 7 million for the first time. This represented an increase of 17 percent over the figure for 1976. The rate of pigs taken out of inventory reached 56.6 percent. Each pig averaged 170 jin in gross weight. The number of sheep increased by 91.85 percent, while the number of cattle increased by 3.17 percent over the figures for 1976. Despite the decline in ocean resources and intensified breeding protective measures, the output of marine products still reached 9,010,200 dan, or 8.93 percent over the figure for 1976. The value of the output of commune and production brigade enterprises increased by two and a half times during the 4 years. It is estimated that the total value of agricultural products for 1980 would reach 4.022 billion yuan, or 40.5 percent over the figure for 1976.

Simultaneous with the overall development of agricultural production, the steady increase in the production of agricultural commercial commodities also contributed to the increase in the supply of agricultural and sideline products to the markets in the cities and villages as well as to foreign markets and thus to the betterment of the livelihood of the farmers. In 1979, the total state procurement value of agricultural and sideline products came to 1.371 billion yuan, or 69.3 percent over the figure for 1976. In 1980, the total value of exports from the province amounted to over 500 million yuan, over 62 percent of which was accounted for by agricultural and sideline products and light industrial products which used agricultural and sideline products as raw materials. The development of cash crop production has resulted in an increase in industrial and commercial tax revenues and in profits. Sugar and tea processing alone yielded 300 million yuan in taxes and profits. The shortage of subsidiary foods in the cities and small towns and in the mining areas over a period of years has been substantially eased.

Under the misguided "leftist" economic policy of developing one particular agricultural product at a time over a long period, the widespread practice of creating farmlands by destroying forests, filling up fish ponds, planting sugar cane high up on the mountains, and the felling of fruit and jasmine trees has brought disastrous results. For example, virtually all of the 10,000 mu of orange groves which used to produce over 200,000 dan of "Fujian oranges" a year for domestic use and for export in Minhou county has been destroyed. This province produced a total of 710,000 dan of oranges in 1957, the figure dropped to 320,000 dan in 1976. As much as 2 million mu of farmland along the coast had been exposed to the ravages of wind and sand. The irony was that food grain production, instead of rising, registered a decline. It was not until after the Third Plenum of the CCP Central Committee that we began to take our experiences to heart and to adopt proper measures for redressing the imbalance within the agricultural sector by taking the following action:

1. While continuing to give priority to the development of food grain production, we directed serious efforts to the development of a number of other undertakings. In the process of laying out a plan for making readjustments in the distribution of crops, there was a trend which tended to overlook the importance of food grain production. For instance, certain quarters showed unseemly haste in readjusting the distribution of crops, some appeared blind to the need to develop the production of cash crops, and some favored the development of cash crops by importing more grain from abroad. The provincial party committee repeatedly stressed the need to take full advantage of favorable local conditions and the need to adhere to the program formulated by the government in seeking a solution of such problems. The way to develop agricultural production is not to direct our efforts exclusively to one single area or to line up grain production against cash crop production as being mutually exclusive objectives. On the contrary, the provincial party committee emphasized that we should take full advantage of the favorable natural conditions of the province to engage in a multiplicity of undertakings so that they may complement each other. In view of the size of the population, the limited farming area and the short supply of food and animal feeds, primary consideration must be given to ensuring adequate food supplies. Since the food problem is one which cannot be neglected at any time, we must not blindly reduce the size of farms which produce grain crops, and must not rush in making readjustments in crop distribution. The import of a certain amount of grain is necessary for the development of cash crops in our overall scheme to readjust our agricultural

distribution. However, we must still rely on our own efforts to solve the grain problem. By putting too much dependence on grain imports and by relaxing our own efforts to develop grain production, we would certainly place ourselves in the perilous position of not being able to take the initiative in our own affairs. The provincial party committee has reiterated time and again that those who are engaged in agricultural production must not limit their vision to the 20 million mu of farmland now in existence, but they must also take into account the 100-odd million mu of hilly terrain and the ocean along the 3,000-kilometer coastline in seeking to develop intensively a multiplicity of undertakings most suitable to that type of terrain. As a result, the cadres on different levels, especially those in leadership positions in the prefectures and counties had a relatively unanimous understanding of the problem and managed to resolve the conflict between the development of grain production and cash crop production. The allocation of farmland for different uses has now been properly readjusted. In 1980, the acreage of farmland planted to grain crops was reduced by 5.13 percent compared to 1979, while the acreage planted to cash crops was increased by 18.92 percent. The correct readjustment of acreage resulted in a continual increase in grain production and a relatively rapid development of cash crop production. During the past few years, many communes and brigades in the province have reaped a bountiful harvest in both tea and grains simultaneously, or in both grains and sugar, or have achieved good results in both forestry and grain production, or have had plenty of pigs, manure, and grain at the same time.

2. While the development of a variety of undertakings was being promoted as a matter of policy, measures were also taken to increase the production of food grains. Since 1976, when the central authorities subsidized the province to the tune of 200 million jin of grains, the province has adopted the following arrangement in sugar production and grain production: The actual amount of sugar cane purchased by the government in 1973 is taken as the base figure. For any amount over and above that figure, the government pays a subsidy in the form of 250 jin of unhusked grains for each ton of sugar cane. If the amount procured falls short of that figure, a quantity of grains is deducted from the grain quota [sic] on the same scale. In areas where this arrangement is adopted, the grain procurement quota remains unchanged, and the subsidized grain may be used to reduce the grain procurement quota. In exchange for each jin of sugar resold by the government to the area of production [in case of natural disasters], the seller is allowed to buy 1.5 jin of wheat from the government. This system has, to a considerable extent, helped to solve the problem of grain taxation and purchasing following the taking over of large tracts of grain-producing land for the planting of sugar cane and of the shortage of food grains in this group of commune members. Since the adoption of this system 4 years ago, the production of cane sugar in the province has increased 2.3 times, while bumper crops of both sugar cane and grains have been harvested in certain areas. In Xianyou County, a predominantly sugar cane producing region, for example, the acreage set aside for sugar canes in 1979 came to 129,000 mu, or 42,000 mu over the acreage for 1975, and yet the total production of grains registered an increase [illegible] million jin over the figure for 1978.

3. Increasing the per-unit yield of grain and cash crops helped solve the competition for land between the two. In grain production, emphasis was laid on seeds, fertilizer and crop protection. Great effort was made to greatly increase the cultivation of hybrid paddy rice. In 1976, the acreage planted to hybrid

paddy rice came to only 240,000 mu. Since 1978, it has been increased to over 8 million mu, and the average per mu yield has been about 150 jin above that of the conventional varieties. The amount of fertilizers has been increased and the method of applying fertilizers has been improved. There has also been an increase in the amount of chemical fertilizers, especially phosphates, applied on each mu of farmland. Furthermore, the use of organic fertilizers has increased, while the method of deep fertilization has been introduced. The area of fertilization beyond the root system has also been enlarged. With improved forecasts on crop disease and insect pests and the adoption of comprehensive preventive measures, several hundred million jin of grains has been saved each year. In the production of cash crops, emphasis is laid on the propagation of quality strains, scientific cultivation and the rejuvenation and conversion of old tea plantations and orchards. For instance, each mu of old tea plantation, after rejuvenation and conversion, is capable of increasing its yield from 40 or 50 jin to 100 or 200 jin. Because the per unit yield of grain and some cash crops in our province has not yet caught up with the advanced levels achieved in our country, and because there is still a considerable production discrepancy in different parts of the province, for a period of time from now on, we should continue to emphasize increasing the per-unit yield as a means of developing grain and cash crop production.

4. Operating on the principle of taking proper measures to suit local circumstances and of taking full advantage of favorable local conditions, we have set up a number of bases for grain production, cash crop production and animal husbandry, and these bases have begun to promote production and raise the commercial standard of the products. In 1979, the grains turned over to the government by 13 counties designated as bases for grain production amounted to 39.2 percent of the provincial total, and the amount of sugar produced by the 17 counties serving as bases for sugar production came to 99.4 percent of the total produced by the entire province.

5. Part of the more than 2 million mu of tideland along the coastal area was reclaimed for farming. During the past few years, over 200,000 mu of tideland has been reclaimed without jeopardizing harbor construction projects or harming the production of marine products. Over 100,000 mu of that has been put under cultivation. This year, it is expected that an additional 40,000 mu will be put under cultivation. Thus, the acreage has been increased for the production of grains and cash crops and a vast expanse of water surface in the reclamation area has been made available for the breeding and production of marine products.

6. Effective steps have been taken to develop the forestry industry. Our province has not only done well in protecting and building up key forested areas in the northwestern part of the province, but has also made intensive efforts to erect a network of windbreak forests to protect the farms along the coast. According to a general survey of the 21 counties and cities along the coastal area conducted in 1972, the forested areas have reached 11.5 million mu, with a coverage rate of 31 percent. Since 1956, 250,000 mu of the 400,000-odd mu of sandy wasteland has been afforestated, and a green protective forest belt is taking shape along the coastline. In the past 2 years, 173,400 mu of land has been turned into forest belts, the highest rate in history for planting forests during the summer season. Nearly 1 million mu of farmland has been protected or partially protected from the ravages of wind and sand, and agricultural production has been developed at a steady pace.

As a result of the intensive efforts made during the past few years, our province has done well in the development of cash crops as well as in increasing grain production. The outlook for agricultural production is indeed promising. However, we still have to take further steps to eliminate the "leftist" influence and to liberate our minds so that we may adopt the proper measures to completely implement the economic policy of the party for the rural areas to speed up the development of agriculture. At the same time, we must continue to attack speculation and profiteering and to put an end to smuggling activities. We must make it worthwhile for the people to work on the land and exert further efforts to promote agricultural production in order to ensure an all-round bumper harvest for 1981.

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LONGQI PREFECTURE ENTERS BUSY SPRING FARMING SEASON

Fuzhou FUJIAN RIBAO in Chinese 19 Mar 81 p 1

[Article from Longqi Prefecture Correspondent Station: "Longqi Prefecture Enters Extremely Busy Spring Farming Season; Thanks to System of Responsibility, Pace of Spring Farming Faster Than During Same Period Last Year, and Quality Better Too"]

[Text] Implementation of a system of responsibility for production in all the counties (and municipalities) of Longqi Prefecture has given vigorous impetus to spring farming and production. The prefecture is now in the midst of the extremely busy spring farming season. Statistics from the units concerned show that as of 14 March, more than 3,350 jin of early rice had been sown in the prefecture, amounting to 80 percent of the total amount to be sown. More than 450,000 mu of sugarcane, peanuts, soybeans, and spring tobacco have also been planted, and in Zhaoan, and Huaan counties, transplanting of rice has already begun. The pace of spring farming is faster than during the same period last year, and quality is also better.

Last year, despite numerous calamities, Longqi Prefecture won a good harvest. Grain output for the prefecture increased a total of more than 170 million jin over the previous year as 10 counties and municipalities in the prefecture reaped increased output. In advance of the extremely busy season in spring farming, leaders in the prefecture and county concentrated their main energies on the implementation of various forms of a system of responsibility for production. Now a system of responsibility has been substantially decided upon for all production units in the prefecture. The mass of commune members are well prepared for this year's production and their zeal is running high. Before the lunar year, all of the 860,000 mu of fields that had lay fallow during the winter were plowed, and some were plowed deeply for sunning, and piled and fumigated [1093 1018 3575 0960] in a use of measures for increasing production that have not been used for many years. Sufficient quantities of fertilizer for spring farming have also been accumulated. As a result of the establishment and perfection of a system of responsibility for production in the Xinchun Production Brigade of Banli Commune in Changtai County, and a regulation that every production team shall "know a year in advance," the enthusiasm of commune members is high. Except for the fields holding winter crops, all of the more than 3,980 mu of rice fields that the brigade plans to plant have been flooded with water, and almost 200,000 dan of fertilizer or an average 50 dan per mu, has been collected for use in spring farming. Cadres and the masses in Gaoshanlou Village of Banshan Brigade, Liyu Commune in Yunxiao County formerly discussed incessantly the form of a system of responsibility for production to be instituted, so much so that preparations for spring plowing were impaired. Following an enlarged meeting of country cadres, the brigade CCP branch declared unequivocally to commune members that commune members themselves must discuss and decide the form of a system of responsibility for production that would be adopted. Acting on the desires of commune members, the two production teams in this village very quickly settled on a system of responsibility for production that satisfied everyone, and work preparatory to farming got underway quickly. Recently, a seasonable rain fell over a wide area substantially relieving drought conditions in all the counties of the prefecture. All communes and brigades took fullest advantage of the post-rainfall period to push plant sugarcane, peanuts, and soybeans, and to give meticulous care to seedling fields for the nurture of sturdy seedlings.

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CSO: 4007/330

BRIEFS

SPRING TOBACCO PLANTING PLAN--Agricultural department statistics show that as of 14 March 96,000 mu of flue-cured tobacco had been planted in Fujian Province, exceeding by 20 percent the planned 80,000 mu, and 34,000 mu more than during the same period last year. Taken together with the winter tobacco, this totals 244,000 mu for the province, an increase over last year of 79,000 mu. The notice issued last October by the Provincial People's Government on establishment of production bases for spring flue-cured tobacco made Yongding, Shanghang, Wuping and Longyan counties into production bases for spring flue-cured tobacco, provided for the holding back from procurement of tobacco beginning in 1981, and provided that the formerly stipulated criteria for subsidies in grain and fertilizer and the method for allocation of fiscal subsidies would remain unchanged. These regulations, plus last year's readjustment of price differences for different grades of tobacco procured, greatly aroused the enthusiasm of commune members for the production of high quality leaf in the major production areas of Longyan and Longqi. The area planted to tobacco by these two prefectures was expanded by more than 37,000 mu and 42,000 mu respectively over last year. In addition, each of the tobacco growing areas established and perfected systems of responsibility for production with contracts for production being entered into with teams, workers, and households, which further increased the enthusiasm for production of the masses. They are now in the process of intensifying field care of spring flue-cured tobacco, and the recovery and toasting of the winter tobacco in an effort to win a new breakthrough in quantity and quality for this year's flue-cured tobacco. [Text] [Fuzhou FUJIAN RIBAO in Chinese 19 Mar 81 p 1] 9432

LONGQI PREFECTURE 1980 FRUIT--Longqi Prefecture, famed both at home and abroad as "fruit country," harvested another bumper fruit crop last year. Total output of the substantial quantity of citrus fruit and lichees was 18.1 percent and 11.7 percent greater respectively than in 1979. Output of longans, pineapples, bananas, and other fruits also increased. Total fruit output for the prefecture was 80,000 dan, a 10.3 percent increase over 1979. Fruit production has grown fairly rapidly in Longqi Prefecture during the past several years. One important reason, in addition to the scientific growing of fruit trees, has been intensification of fruit tree care, perfection of various forms of a system of responsibility for production, and further overcoming the situation of "eating out of a common pot" in fruit management, which has aroused the enthusiasm of commune members in fruit growing areas. In the process of establishing and perfecting a system of responsibility for fruit tree care by communes and brigades in all fruit-growing areas, attention has been given on the basis of different varieties of different kinds of fruit trees to natural conditions, the growth situation for old and young trees, and large crop and small crop years. With these things in mind, different kinds of management have been adoped, and different requirements and conditions for rewards and penalties proposed. While adhering to collective ownership of the means of production with the product reverting to the collective for distribution, various forms of a system of responsibility for production have been adopted, assuring, thereby, increased fruit output. [Text] [Fuzhou FUJIAN RIBAO in Chinese 23 Mar 81 p 1] 9432

CSO: 4007/330

GUANGDONG

EMPHASIS ON HOG RAISING CONTINUES; PROVINCE NOT YET SELF-SUFFICIENT

Guangzhou NANFANG RIBAO in Chinese 12 Mar 81 p 2

/Article by Zhou Qishu /0719 7871 2873/: "Shipments of Pork From Other Provinces Have Increased; There Can Be No Slackening of Hog Raising"/

/Text/ In recent years the quantity of pork shipped to Guangdong Province from other provinces has gradually increased. Statistics show that in 1978 it was 6,811 tons. By 1979, it had increased to 40,483 tons, a fivefold increase. In 1980, shipments were even greater with the number of head shipped amounting to 41 percent of the total of state purchases for the entire province for the entire year (the portion purchased at negotiated prices excepted, and the same applying to subsequent figures). Figured at an average supply of 20 jin per person per year for everyone in large and medium size cities and all prefectures of the province, the amount supplied in 1980 would be enough for 2 years.

Shipments of pork from other provinces to regulate market supply in Guangdong is normal. The problems are reliance in recent years on other provinces for pork, a relaxation of growth in the local hog raising industry, a slackening of marketing management, and a drop in the amount of hog procurement. Statistics show that as of the end of November last year, the number of live hogs in pens throughout the province had declined by more than 1.1 million head from the same period during 1979, a 5.9 percent decline. Hog procurement fell by 1.65 million head, a decline of 26.8 percent. In some counties, cities, and towns, rationed supplies of pork were not normal, or pressure was exerted to supply pork at negotiated prices rather than at list prices. Quite a few places had not done a good job of fulfilling quotas for surrender of pork to the state or for export. Second rate hog dealers took the opportunity to operate unrestrainedly, and profiteering and speculation ran rampant. Furthermore, this situation attracted no serious attention in some places. Despite reiteration by individual counties and the provincial government last September of policies on hog procurement, plus improvements in criteria for award sales of goods for hog procurement, still few hogs were procured. For example, during September last year only two live hogs were procured in one prefecture having 12 counties.

Sole reliance on other provinces to supply pork has also seriously increased pressures on the country's transportation and increased its financial burden. Had all the pork shipped into Guangdong last year from Shandong, Henan, Hubei, Hunan, and Jiangxi provinces gone by railroad, 2,410 refrigerator cars, each with a 40 ton carrying capacity, would have been needed. This amounts to more than 100 trains. We understand that for every 100 jin of pork brought into the province last year, freight costs averaged 19.52 yuan, and for this item alone, provincial financial departments had to subsidize operating losses of 37,670,000 yuan last year, thereby greatly increasing the policy losses of food departments in Guangdong.

Of course, the main reason for the passive situation in Guangdong Province's pork supply in recent years has been the numerous changes in requisition procurement policies for live hogs, which has meant no rise in output. With less production, the quantity procured had to be less as well, and a shortage of supply appeared in the markets. However, in addition to this fundamental reason, some comrades, either consciously or unconsciously, entrusted Guangdong's supply of pork to shipments from other provinces, and consequently they did not give attention to, or gave little attention to requisition purchases of live hogs from peasants, and they did not give attention to, or gave little attention, to management of the pork market. This was another reason for the passivity of pork supply in some counties and municipalities; yet, this problem has generally not aroused the serious attention of Guangdong's authorities.

Deserving of praise are the comrades in numerous counties and municipalities who, despite the abundant supply of pork from other provinces, continued to maintain clear heads and spared no efforts to surmount various difficulties, upheld hog procurement policies reasonably well, and strived to use various means to continue growth of public and private hog raising. One example was the commercial and food departments in Gaoyao County. Since 1979, with the support of local party and government leadership organizations, they focused on a situation in which collective hog farms operated by communes and brigades universally incurred losses and the number of hogs they raised declined. They vigorously promoted integrated agricultural and commercial pig farms, fairly well solved commune and brigade problems of funds, fodder, administration and management, and scientific hog raising methods, and vigorously promoted development of collective hog raising. Statistics show that the 12 hog farms participated in by the Bureau of Commerce and food departments, which early became integrated enterprises, had already raised 5,289 hogs as of the end of November last year, and had sent to market 2,303 slaughter hogs, for a profit totaling more than 40,000 yuan. We hope that the units concerned will summarize and promote the experiences of these units, and put to use the advantageous condition of a bumper grain harvest in Guangdong last year, strive together from top to bottom in active development of hog raising, intensify market management, and enhance requisition purchase work, so that the supply of pork in Guangdong Province can become more abundant.

9432
CSO: 4007/332

MORE GRAIN, SUGAR NEEDED BEFORE PROCUREMENT YEAR ENDS

Guangzhou NANFANG RIBAO in Chinese 19 Mar 81 p 1

/Article: "Take Sugar Procurement Work Firmly in Hand to Assure Fulfillment of Quotas to be Tendered to the State; Provincial Government Issues Urgent Notice Pointing to Problems in Sugar Procurement for Surrender to the State; Except for Sugar That Policies Permit Producers to Retain, All Other Sugar in Possession of Sugar Refineries or Small Sugar Plants Must be Frozen"7

/Text7 On 16 March the Provincial People's Government issued an urgent notice calling upon all echelons of the People's Government to earnestly take in hand sugar procurement work to assure fulfillment of quotas for surrender to the state.

The notice pointed out that the cane sugar production picture during this crushing season will be better than originally forecast. Nevertheless, state procurement quotas and quotas for surrender of sugar to the state have not been met well. Sugar procured by the state, including sugar purchased at negotiated prices, amounts to only 77.5 percent of output, and the amount surrendered to the state amounted to only 65 percent of quotas for surrender to the state, a considerable part of which was sold to the state at negotiated prices. The situation of fulfillment of state purchase quotas and quotas for surrender of sugar to the state varies greatly from one place to another within the province. Places that have fulfilled state procurement quotas fairly well include Foshan, Zhaoqing, and Shaoguan prefectures and Guangzhou municipality. Places making a poor showing in fulfillment of their state procurement quotas and quotas for tendering sugar to the state include Shantou, Huiyang, and Meixian prefectures plus the Hainan Administrative District. Guangdong is a major producer of sugar, and sugar is a staple product that Guangdong provides the country. The quotas for surrender to the state must be fulfilled and efforts should also be made to overfulfill them. At the same time, the market supply situation within the province must be taken care of. For these reasons, the provincial government has called upon every jurisdiction to take the following actions to assure fulfillment of both state procurement quotas and quotas for surrender to the state of sugar.

1. Except for sugar that policies permit producers to retain, all other sugar in possession of sugar refineries or small sugar plants must be frozen. All sugarcane grown on collectively owned land, no matter the form of a system of responsibility for production in use, and no matter whether within quotas for excess contracted output, must be sold in entirety to the state at the list price. In

accordance with existing sugarcane procurement price, the state will grant extra-price subsidies, will make award sales of goods, will return profits, and will keep sugar in accordance with policies. Following verification of sugarcane grown on the private plots of commune members, the cane will be admitted for processing by sugar plants.

2. Except for sugar that may be retained in accordance with policies, and except for sugarcane verified as having come from private plots and admitted for processing with the sugar being returned to the producers, all other sugar must be sold in entirety by sugar refineries and small plants that produce it to the state-owned sugar, tobacco, and wine companies. On no pretext may it be handled simply in accordance with the processors wishes.

3. All sugar stocks that have been purchased as a result of meddling, or that have been fraudulently purchased by any units not authorized to deal in sugar, including commercial, supply and marketing, industrial and mining, or party and government units must be completely frozen and surrendered for sale at list price to sugar, tobacco, and wine companies. All profits derived from sales already made must revert in entirety to local public finance with no withdrawal of bonuses. All who have meddled in the procurement of sugar may not be issued loans by banks. Second-rate brokers, speculators and profiteers who illegally jacked up prices and bought up cane sugar shall have all their sugarcane and funds derived from dealings in sugar confiscated, and they shall be dealt with according to the seriousness of their offenses.

4. All sugarcane produced by state farms (including overseas Chinese state farms and labor reform state farms), no matter whether inside or outside quota, must be sold to the state in entirety. In accordance with policies, the state will grant extra-price subsidies, make award sales of materials, and retain sugar. Except for sugar that may retained in accordance with policies, all sugar produced by sugar refineries that farms operate themselves must be sold to the state at the ex-plant list price, and extra-price subsidies for sugarcane will be granted. On no account shall it not be sold to the state or requests made for a negotiated price or increased retention.

5. Actively do a good job of procurement work for private plot sugarcane and for sugar in excess of individual consumption needs. Commune members should be aroused to sell to the state all sugarcane from private plots and all sugar they keep that is in excess of their consumption needs, and the state must strictly carry out provincial government regulations in procurement of sugar at negotiated prices with no raising of the price at will.

The provincial government's urgent notice emphasized that all prefectures that have not yet fulfilled their quotas for surrender of sugar to the state and have cut back on local sales must fulfill quotas. Those prefectures that have already fulfilled quotas for surrender of sugar to the state should make arrangements to surrender as well all sugar in excess of quota, except for the portion that may be retained locally, in order to assure fulfillment and to overfulfill quotas to be tendered to the state. Flow of sugar out of the province must be strictly controlled. Foreign trade units and jurisdictions may not take the initiative for export of sugar. Sugar (including candy) to be exported outside the province requires completion of outshipment procedures by the provincial authorities in charge in accordance with regulations, and without such authorization, railroads, and transportation units shall refuse to undertake shipment. Private movement outside the province must be investigated and stopped. Supply of sugar should be done in accordance with the situation at the source of supply, with rational arrangements being made that take all factors into account, and no excess sales being made.

The provincial government also called upon the railroads, and shipping and transportation units to organize their transportation forces to do a conscientious job of transporting sugar. All sugar surrendered in accordance with plans by sugar, tobacco, and wine companies to municipalities and prefectures in each province, or to jurisdictions within the province, should be guaranteed timely transportation. Railroad departments and all others concerned must actively coordinate to rush transport, in the shortest period of time, sugar that accumulates at piers and railroad stations.

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CSO: 4007/332

GUANGDONG

BRIEFS

SUGAR CANE EXPANSION--The people's provincial government of Guangdong adopted several policies regarding sugar production including 1 ton of grain for 1 ton of sugar, price subsidies, and return of profits, which have encouraged the peasants of the area to grow sugar cane. The province's area for growing sugar cane has expanded this year. As of the beginning of April, sugar cane was planted on 3.06 million mu, an increase of 490,000 mu as compared with the same time last year. [Text] [Beijing RENMIN RIBAO in Chinese 17 Apr 81 p 4]

CSO: 4007/397

BRIEFS

SUGAR CANE PRODUCTION--From the beginning of the pressing season to 5 May, Guangxi's sugar mills machine-processed a total of more than 41,000 tons, an increase of more than 20,000 tons over the previous season. Over 85 percent of quality white granulated sugar is excellent or grade one. [Text] [Beijing RENMIN RIBAO in Chinese 17 Apr 81 p 4]

CSO: 4007/397

BRIEFS

FLUE-CURED TOBACCO GROWING--As of 2 April Guizhou, one of the most important areas for flue-cured tobacco production, already had more than 54,000 mu of flue-cured tobacco seedlings growing. This is sufficient for planting more than 1 million mu of tobacco. It is said that this will be a record for Guizhou Province. At present commune members are trying every possible means to cultivate tobacco seedlings well in order to achieve a bumper harvest in flue-cured tobacco. [Text] [Beijing RENMIN RIBAO in Chinese 17 Apr 81 p 4]

CSO: 4007/397

TWOFOLD INCREASE IN SUGAR PRODUCTION DURING FIRST QUARTER

Shijiazhuang HEBEI RIBAO in Chinese 25 Mar 81 p 1

[Article by Li Baoshun 021 1405 7311], Fang Jianjun [2075 1696 6511]: "Two-Fold Increase in Hebei Sugar Production During First Quarter"]

[Text] Production of sugar reached more than 5,200 tons in our province during the first quarter this year, an increase of 230 percent over the same period of last year, hitting a record high.

Last year, the sugarmaking industry in our province restructured the economic system and carried out experiments to set up integrated agricultural-industrial-commercial enterprises. The first integrated agricultural-industrial-commercial sugar mill was set up in Fengning County. Peasants in Changli County planted sugar beets and reduced the planted area of other crops. When they delivered and sold their sugar beets, the peasants got a transportation allowance of 0.20 yuan per ton-kilometer. Zhao County added the transportation cost to the purchase price of sugar beets, increasing the purchase price from 0.0375 to 0.048 yuan per ton [sic], and returned sugar beet slivers pro rata to the peasants. These measures benefitted the sugar beet growers. The area sown to sugar beets was enlarged and the quality of sugar beets got better and better. The sugar beet-growing area reached 136,000 mu in the province and the yield amounted to 96,000 tons last year, an increase of more than 30,000 tons over 1979. The sugar mill in Zhao County purchased 14,500 tons of sugar beets last year, 140 percent more than in 1979.

Raw materials were abundant and the 12 sugar mills in the province ran at full capacity during the pressing season.

During the 1980-1981 production period output of sugar reached 9,600 tons, a 37 percent increase over the previous production year. The sugar mill in Zhao County doubled its output; the sugar mill in Changli County reversed their loss of money, made a profit and paid 285,000 yuan tax to the state; the integrated agricultural-industrial-commercial sugar refinery in Fengning County increased both their production and their income.

9780
CSO: 4007/378

HEBEI

BRIEFS

ALL-TIME HIGH FARM PROFITS--Last Year profits from the Hebei agriculture and land reclamation system reached an all-time high, amounting to more than 40 million yuan, a 5 million yuan increase over the previous year. The Hebei system stood in third place nationally. Major experiences impelling tremendous growth last year were three: First was vigorous development of diversification even while devoting great attention to grain production. Second was efforts to increase production while practicing thrift. Last year the entire system had three such large campaigns in which efforts were intense and unrelenting, actions were tough, and implementation was decisive. Because of the steadfast emphasis on increased output and practice of thrift, results were extremely remarkable. Statistics show a more than 3.8 million increase in earnings last year, and savings in expenditures of more than 2.6 million yuan for a total of more than 6.4 million yuan, or 13.3 percent of profits for the entire year. Third was active experimental operation of integrated agricultural, industrial, and commercial enterprises. As of the end of December last year, the province's agriculture and land reclamation system had set up 11 integrated agricultural (or livestock raising), industrial, and commercial companies, operated more than 100 commercial networks, and sold from their own farms and livestock ranches raw materials, processed agricultural byproducts, and small light industry manufactures that they had produced themselves in an all out effort to increase earnings. [Text] [Shijiazhuang HEBEI RIBAO in Chinese 24 Mar 81 p 1] 9432

LIVE HOG PROCUREMENT PLAN--Mid-March statistics show accumulated procurement of more than 1.45 million live hogs in the province, or 104.32 percent of the first quarter plan and an almost 30,000 head greater procurement than during the same period last year. First quarter marketing plans approached fulfillment with the sale of 15,000 more head than during the same period last year. Shipments to Beijing planned at 180,000 head ran to 230,000 head; planned shipmentsto Tianjin of 140,000 head ran to 209,000 head, and more than 60,000 head were sent to help Heilongjiang and Hubei provinces. The live hog procurement situation is currently fairly good. Channels for shipments outside the province are flowing smoothly, and most areas have resumed their former procurement standards, but in individual areas there are still some problems for the masses in "difficulties in pig deliveries," and "difficulties in buying pork." In order to solve these problems, the Provincial Bureau of Commerce recently issued an urgent notice calling upon all jurisdictions to open up procurement, allowing no halt to procurement or delays in procurement. Quotas for stock on hand were set, and until the quotas are met, there can be no halt in procurement or in shipments. Vigorous efforts continue to make sales, to procure more, to market more, to ship more, and to keep more in stock to satisfy mass purchase requirements. [Text] [Shijiazhuang HEBEI RIBAO in Chinese 30 Mar 81 p 1] 9432

CSO: 4007/378A

SEED SUPPLY, QUALITY ASSURED DESPITE LAST FALL'S DISASTER

Harbin HEILONGJIANG RIBAO in Chinese 15 Mar 81 p 1

[Article by Bi Weiren [3968 3634 0086] and Lu Hongan [4151 4767 1344]: "Seed Supply Assured This Year Despite Last Fall's Disaster; 'Four -izations and One Supply' Seed Levels for Heilongjiang Province Again Raised; Quantity of Seeds Assembled by Counties for Supply Amounts to 490 Million Jin or 82 Percent of Required Supply"]

[Text] Institution of "four -izations and one supply of seeds" has caused a steady increase in farm crop seed supply levels in Heilongjiang Province. Despite the disasters that seeds suffered last fall, the seeds assembled for supply by the counties this year will still amount to 490 million jin, a more than 70 million jin increase over last year.

During late October last year, a great snowfall occurred throughout the province, and the snow-covered seeds increased their water content, which caused difficulties in storing them. Some of them lost their ability to reproduce. However, because of the "four -izations and one supply" work, to which every prefecture in the province has given attention during the last 3 years, and which has increased output and processing and storage capacity, difficulties resulting from the seed disaster were greatly diminished. Statistics show that the reserve storage capacity throughout the province for corn and gaoliang hybrid varieties exceeds seed storage needs by 10 percent and 35 percent respectively. As a result of exchanges and redistributions done by seed departments, the seed shortage for paddy rice and soybeans which suffered great damage has been compensated. The state has ruled that seeds to be annually assembled for supply by counties must include all of the hybrid corn and gaoliang, and one-third of the inbred crop seeds. This year the seeds supplied throughout the province have met 82 percent of national requirements. Seed quality has also been higher than usual. Except for rice, seeds for all other grain and bean crops have met national grade 2 standards for purity, cleanliness, and sprouting rate.

Ability to assure sufficient quantity and quality of seeds despite disasters, and to supply seeds uniformly to 69 cities and counties in the province to different degrees and the tremendous increase in the propagation of superior varieties by state enterprises and the collective, as well as refinements in seed storage, sunning grounds and mechanized processing equipment are all part of a piece. For example, thanks to the availability of a large amount of drying and cleaning equipment, last year more than 130 million jin of wet seeds were dried by machines or in drying rooms, and 340 million jin of seeds were cleaned. An expansion in the area of stock and superior varieties assured an increased output of early ripening and high output superior seeds. Superior varieties including Longdan No 2 corn, Kefeng No 2 wheat, Nenfeng No 9 soybeans, and Longfuliang No 1 gaoliang, which last year showed quite good properties of increased yields, were provided in quantities this year of from 15 to 25 times respectively that of last year.

9432
CSO: 4007/330

BRIEFS

RAOHE COUNTY SPRING WATERLOGGING--A broadcast from the Provincial People's Broadcasting Station on 11 March said that following the lunar New Year, Raohe County daily sent out more than 2500 people to rid drainage ditches of accumulated snow so that water from the mountains would not innundate the fields, and so that some low-lying easily water-logged plots might be planted on time. Between last September and this February, Raohe County has had a total of 242 millimeters of rain and snow, and the water content of the soil amounts to more than 40 percent. As a result of last year's heavy rainfall and the large amount of snow in winter, the cultivated layer of the soil is virtually saturated, and springtime waterlogging has become an accomplished fact. An area of more than 170,000 mu in the county has become waterlogged. Of this amount, more than 96,000 mu is seriously waterlogged, and more than 44,000 mu is in danger of being impossible to plant. Acting in response to the waterlogging, the County CCP Committee began last winter to mobilize manpower and vehicles to open ditches to drain away water and clear out silting, and has now completed movement of 200,000 meters of earth and stone, and the excavation of 21 drainage ditches, which can solve waterlogging for more than 46,000 mu. [Text] [Harbin HEILONGJIANG RIBAO in Chinese 14 Mar 81 p 1] 9432

FARM MACHINERY REPAIRS--Shuangcheng County has been very active in the overhaul of farm implements, and has very good experience in such work. Now, with the approach of the spring farming season, in quite a few places large numbers of farm implements have not been put in condition, which is very bad for spring farming. It is hoped that such places will strengthen leadership, diligently solve various real problems, and take in hand this weak link before spring farming begins. Shuangcheng County's winter inspection of farm machinery has been completed, and the winter training of maintenance personnel is winding down. Numerous communes and brigades have begun to remove stubble and snow from the fields in an effort to assure timely planting, preservation of moisture, and protection of seedlings. Shuangcheng County boasts a considerable amount of farm implements, and the proportion of mechanized operations is fairly high. As a result of agricultural disasters and a fall in output of grain last year, funds were inadequate for winter farm machine maintenance. In light of this situation, authorities concerned in the county held joint discussions and collected 340,000 yuan to solve the urgent needs for winter maintenance. Many of the communes and brigades that had been hard hit by disaster termed this support from the party and government as a "gift of charcoal during a time of snow," or a "timely rain," which provided great encouragement. This year, Shuangcheng County dispatched a vehicle to deliver spare parts to the front line of farm implement overhaul while arranging timely production by the county of some spare parts in short supply such as the outer and inner drills of seeding machines, and the frames of soil tamping devices. In the repair of machinery, every plant has perfected a system of responsibility of "in place contracting for repairs, recording of workpoints for quotas, and sharing of profits," as a result of which in major overhauls, machinery horsepower has been restored to better than 99 percent, and the rate of fuel consumption has met prescribed standards. Every commune also uses a system of responsibility at the time of repair of farm implements whereby most farm implements reach A or B grade standards. Winter farm machinery training has proceeded simultaneously with winter inspection and repair work throughout the county. Standardized training has been given teachers throughout the county and standardized teaching materials have been printed. Counties and communes have divided up training tasks. The weather has now become warm, and many communes and brigades have begun to clear away stubble and snow in the fields as well to ready the fields, to reinspect implements that have undergone repair, to make further repairs, to break in and to test operate implements to eliminate any breakdowns in machinery in advance of the very busy season in spring farming. [Text] [Harbin HEILONGJIANG RIBAO in Chinese 14 Mar 81 p 1] 9432

SPRING SOWING--Spring sowing work is in full swing in Heilongjiang Province. By 7 May the province had sown 39 million mu of field and cash crops, 44 percent of the planned acreage. Some 25.5 million mu of wheat sowing task has been assigned to various localities, and some 6.7 million mu of wheat has been sown. [Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 11 May 81 SK]

FALLOW FIELDS--Bayan County, Heilongjiang Province, has encouraged commune members to sow fallow fields following their completion of field crop sowing on 5 May. By 10 May, 46,000 mu of fallow fields had been sown, 21,000 mu more than in the corresponding 1980 period. It is expected that 76,000 mu of fallow fields will be sown this year and 7 million yuan of extra income will accrue. [SK142303 Harbin Heilongjiang Provincial Service in Mandarin 2200 GMT 13 May 81]

SONGHUAJIANG PREFECTURE SOWING--Songhuajiang Prefecture, Heilongjiang Province, after completing 90 percent of the sowing of field crops, has promptly started to check the sown fields and replant the withered seedlings. At present, there are over 60,000 persons, organized into 7,600 groups, engaged in checking the sown fields. So far they have checked 9.42 million mu, 73 percent of the sown fields. The prefecture also planned to sow 320,000 mu of fallow fields, of which 184,000 mu have been sown. [SK170645 Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 15 May 81]

CSO: 4007/398

BRIEFS

EARLY RICE--Hubei Province had transplanted early rice seedlings to 8 million mu of paddy fields before 3 May. By 10 May, topdressing had been applied to 5 million mu of them. [OW150431 Wuhan Hubei Provincial Service in Mandarin 1100 GMT 14 May 81]

CSO: 4007/398

SCIENTIFIC EXPERIMENTS BRINGING INCREASED CROP YIELDS

Nanjing XINHUA RIBAO in Chinese 5 Mar 81 p 1

[Article: "Last Year Jiangsu Province Had More Than 400 Scientific and Technical Achievements"]

[Excerpt] As a result of readjustment, consolidation, restructuring, and improvement, last year Jiangsu Province's science and technology front line had more than 400 scientific and technical achievements in agriculture and industry (principally in light textiles, energy, and transportation and communications). Many of these achievements have found preliminary application and promotion, earning substantial economic benefits.

New advances were made last year in agricultural research in the fields of breeding of varieties, crop culture, and disease and insect pest prevention and control. The two production brigades of Taoli and Zaozhuang in Huangchuan Commune, Donghai County conducted experiments in growing techniques on a 100 mu tract using medium geng "77032," from which experiments they preliminarily adduced a set of growing techniques from which the Taoli experimental station derived yields averaging 1320 jin per mu, and the Zaozhuang experimental station derived yields averaging 1328 jin per mu. All prefectures conducted experiments with high yield growing techniques for wheat, barley, naked barley, and rice on 100 mu tracts, achieving heartening results in understanding farming methods and laws that bring high yields, consistent yields, conservation of labor, and lowered costs. Eighteen wheat experimental stations in the province averaged yields of 911 jin per mu, and 19 rice experimental stations averaged yields of 1,045 jin per mu. The new variety of rape, "Ningyou No 7," bred by the Economic Crop Institute of the Provincial Academy of Agriculture produces yields that are from 10 to 20 percent greater than similar varieties. Oil content of seeds is between 1.5 and 3 percent higher than for other varieties. Last year Jiangsu Province planted 1.1 million mu of this kind of rape, which accounted for 25 percent of the total rape acreage. Dafeng County promoted wide area use of multiple prevention and control techniques against major insect pests of cotton, bringing 6000,000 mu under control, which was 66 percent of the total cotton growing area in the county. It further reduced the amount of pesticides used and lowered costs. Experiments in high output techniques for the raising of pondfish conducted by Hele Commune in Wuxi and the Wuxi Municipal Aquatic Productions Institute produced a record average output of 2,000 jin of fish per mu.

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CSO: 4007/323

BRIEFS

SEVERE WINDSTORM--On 10 and 11 May, a 9-10 force wind swept across Jinzhou Municipality, Liaoning Province, affecting 1 million mu of crops and 120,000 fruit trees. Beizhen and Yi Counties were most severely hit. [SK152252 Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 14 May 81]

CSO: 4007/398

BRIEFS

FIELD CROP PLANTING--By 30 April, Nei Monggol had planted 28 million mu of field crops, 7.8 million mu more than the corresponding 1980 period. [SK081325 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 7 May 81]

DIVERSIFIED ECONOMY--In order to boost the economy in rural and pastoral areas, Ju ud League, Nei Monggol region, has accelerated the development of diversified economy and strengthened the construction of diversified economic bases. In 1980, the total income from diversified economy was 160 million yuan and per capita income of peasants and herdsmen was 51 yuan on an average. [SK111348 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 10 May 81]

SOYBEAN PLANTING--Hulun Buir League, Nei Monggol region, plans to sow 570,000 mu of soybean in 1981, an increase of 110,000 mu over 1980. As of the end of April, the league sowed some 190,000 mu of soybean. [SK111348 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 10 May 81]

SNOWSTORM DAMAGE--Xilin Gol and Ju ud Leagues, Nei Monggol Autonomous Region, were hard hit by snowstorm during 2 to 11 May. When the vast agricultural and pastoral areas in the region were busily engaging in spring production, a great snowstorm suddenly hit the northern parts of Xilin Gol and Ju ud Leagues. According to the preliminary estimate, Xi Ujimiqin and Dong Ujimqin Banners in Xilin Gol League suffered great damages. Some 3.3 million mu of sown fields in the north of Ju ud League were affected. Leading comrades of the regional CCP committee and government convened an emergency meeting on 13 May to work out relief measures. Two work groups were sent to the two leagues to help relieve the disaster. [SK170654 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 15 May 81]

SUGAR PRODUCTION--Nei Monggol Autonomous Region has begun to adopt measures to tap latent production potentials and to conduct technical innovations and renovations among the old sugar refineries across the region to increase sugar production. According to initial statistics, the region increased the sowed area of beet crops by 1.04 million mu of farmland. It is estimated that the total 1981 sugar output will be over 1.17 million tons. Sugar refineries in Hohhot and Baotou municipalities have received grants totaling 6 million yuan for the purpose of conducting such technical innovations and renovations. It is estimated that these renovation projects can be completed within 6 months. If the projects develop successfully, these sugar refineries would be able to increase their sugar beet processing volume by 120,000 tons and the output of edible sugar by 15,000 tons this year. [SK210512 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 17 May 81]

OIL-BEARING CROPS--Ulanqab League, Nei Monggol Autonomous Region, plans to cultivate 2.6 million mu of oil-bearing crops, two-thirds of which are sesame seed. In 1979 and 1980, the league devoted about 13 percent of its total cultivated areas to oil-bearing crops. The league's total acreage for sesame accounts for one-fifth of the nation's acreage. As of 18 May, the league had sown 1.5 million mu of oil-bearing crops. [SK210512 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 19 May 81]

CSO: 4007/398

NINGXIA

GUIDELINES ISSUED FOR SPRING SOWING

Yinchuan NINGXIA RIBAO in Chinese 11 Mar 81 p 1

[Article: "Inspire Enthusiasm, Concentrate One's Strength, Try Hard to Do Well Spring Sowing; Ningxia Government Holds Telephone Conference"]

[Text] The People's Government of Ningxia Hui Autonomous Region held a regional telephone conference on spring plowing and production on the evening of 9 March. Ma Sizhong [7456 1835 1813], Vice Chairman of the People's Government of the Autonomous Region spoke at the conference.

The relevant departments of the autonomous region recently sent teams to inspect the preparations made for spring plowing and sowing in the irrigated areas. Judging by what was found during the inspection, land was generally leveled better than in previous years, the amount of seeds sown was larger than last year and chemical fertilizers in stock were adequate compared with last year; oil cake fertilizer had markedly increased. A number of countries conducted training courses in wheat techniques. Some counties compiled handbooks on cultivation techniques for wheat to guide spring sowing. Some counties set standards on scientific application of fertilizers on the basis of a general survey of soil. The leading bodies of many counties contracted work for small sections, divided labor with individual responsibility, and conducted investigation and research. These measures gave a strong impetus to spring plowing and production.

Referring to what was found during the inspection, Comrade Ma Sizhong pointed out: Development of production was not even and some conspicuous problems must be given serious attention and promptly solved.

1. Severe drought: Rain and snowfall have been scarce in most mountain areas since last autumn. The soil moisture is very low and dry soil layer is about 5 inches deep in Yanchi, Tongxin, Haiyuan and northern Guyuan and more than 3 inches deep in some upland fields in the irrigated areas. These conditions have caused difficulties in spring sowing. Air temperature has dropped since 19 February and the thawing is slow, putting off the spring wheat sowing season.

2. As regards material preparations, in most of the irrigated areas, native fertilizers have shown a decrease compared with last year; there is a great shortage of concentrated fertilizers; some communes and brigades have improperly cut down the amount of chemical fertilizers applied. Seeds have been carelessly selected by

some teams, no sprouting experiments have been made, and there has been severe mixing of different kinds of seeds. The question of varieties has not been seriously adjusted in some low-fertilizer-level areas.

3. A few communes and brigades have not extensively and deeply popularized the party's rural economic policies and have not yet determined the system of production responsibility.

4. Some teams under the system of contracting production to households and contracting work to households are short of draft cattle. No funds are made available to newly formed teams and roving teams to buy draft animals and farm implements. Poverty-stricken communes and brigades lack money to buy chemical fertilizers and exchange seeds.

5. Last year's bumper harvest has made some cadres unrealistically optimistic, self-complacent and careless. They do not give due attention to the present problems existing in spring plowing.

In view of these problems, Comrade Ma Sizhong set forth the following views:

1. Leading bodies at all levels must think in terms of resisting drought over a long period of time and seizing a bumper harvest. According to weather forecasts, there is a trend towards continuous drought through spring and summer this year, comparable to that in 1973. This demands that we make ideological and material preparations as well as prepare measures against natural disasters. The whole year's work depends on a good start in the spring. For the present, we should do everything possible to grasp spring sowing effectively, break up the soil to preserve its moisture and proceed with drought-resistant sowing; after sowing, we should promptly roll the soil to increase and preserve the moisture in the soil. As to winter wheat in the mountain areas, we should strengthen field management and do a good job to preserve the young plants and apply additional fertilizers. In arranging crop distribution, we should plant more drought-resistant crops, e.g., potatoes. Where spring wheat cannot be sown because of drought, broom corn millet and oil-bearing crops may be planted as an important measure and a good arrangement for resisting drought and preparing against natural disasters. At the same time as doing spring sowing well, we should seriously protect livestock against drought and ensure that sheep and goats will survive the spring shortage of fodder.

2. Scientific farming should be seriously promoted. A. Sow on time. In irrigated areas where more late-ripening varieties of wheat are planted, communes and brigades should strive for completion of sowing before 15 March so that farm work will be done in the right season. B. Apply fertilizers adequately and skillfully. C. Owing to high temperature in the winter, there is the possibility of an outbreak of plant diseases and insect pests. All localities should strengthen prevention and control of plant diseases and insect pests with emphasis on prevention. D. Exchange poor quality seeds for good ones as quickly as possible and carefully select seeds. E. Make early preparations for irrigation and concentrate forces to carry out annual repairs so as to ensure smooth irrigation and drainage. F. The Department of Farm Machinery should keep machinery and implements in good repair, ensure supply of spare parts, perform service on the spot, and nip trouble in the bud.

3. County people's governments should assign competent cadres to help those communes and brigades where the system of production responsibility has not yet been instituted. These cadres should suit measures to local conditions and consult the masses,

institute the system quickly and resolutely and throw themselves into spring plowing. Positive measures should be taken to resolve the shortage of farm animals and farm implements arising from the introduction of the contracting production to households and contracting work to households and from reducing the scope of the production teams. For example, the problem should be solved by plowing the field on behalf of others, exchanging labor and helping and cooperating with each other so as to do farm work on time.

4. Strengthen leadership in spring plowing. Leading bodies at all levels should firmly grasp the weak links like low-yield areas and poverty-stricken communes and brigades. Proceeding from reality, they should solve whatever problems are found and do everything conceivable to keep pace with the progress of production. Those poverty-stricken communes and brigades lacking funds and fertilizers should solve their problem through their own efforts and mutual aid and borrowing. Where the problem is really beyond their means, counties, communes and brigades may negotiate loans with banks or credit cooperatives to solve it.

9780
CSO: 4007/378

RECORD LEVEL GRAIN OUTPUT IN 1980 RECORDED

Yinchuan NINGXIA RIBAO in Chinese 15 Mar 81 p 1

[Article by Wang Xuequan [3769 1331 6898]: "Record Level Total Grain Output in Ningxia Last Year"]

[Text] Total grain production reached a record level in Ningxia last year. Gratifying achievements seldom witnessed in the past were also scored in the production of oil-bearing crops and sugar beets and in animal husbandry.

Good news of bumper harvests have kept coming from both banks of the Yellow River and from Liupanshan since last autumn. According to figures from the Statistical Bureau of the autonomous region, total output of grain reached 2.407 billion jin last year, an increase of 13.39 percent over the previous year or an increase of 1.84 percent compared with 1974, the year of record level in our autonomous region. Compared with 1979, production increased in 15 of the 18 municipalities and counties of the region, by more than 20 percent in Xiji, Guyuan, Lingwu, Yongning, Qingtongxia, and the Yinchuan suburbs. Total production of oil-bearing crops reached 71.96 million jin last year, the third year of bumper harvests since the liberation. Production of sugar beets increased more than 250 percent last year over and above the large increase for the previous year. The amount of large livestock on hand was 3.5 percent larger than in 1979. The number of live hogs removed from inventory reached 320,000 head, a 14.6 percent increase compared with the previous year; sheep and goats removed from inventory reached 429,000 head, a 39.7 percent increase compared with the previous year; animal products like cow's milk and sheepwool showed a greater increase compared with previous years.

There were multiple reasons for the all-round bumper harvest in our region last year. The bumper harvest was mainly attributable to the implementation of the rural economic policies formulated since the Third Plenum of the Party Central Committee, particularly to the gradual restoration and perfection of the various systems of production responsibility. In the process of implementing the rural economic policies the party committees and people's governments at all levels persistently overcame "leftist" thinking in economic works and resolved the widespread problems of eating from the same big pot, setting high targets and "cutting things indiscriminately." As a result, in many places reality was taken as the point of departure and measures were suited to local conditions so that in determining the forms of production organization or in handling the relationships among agriculture, forestry, sideline production and fisheries, they were able to proceed from reality. Thus cadres and commune members generally felt there were bright prospoects and received a great encouragement from the bright future of the commune members who had prospering families and who were building a new countryside of socialism. Attendance rate was high, work was efficient, farm work was of good quality, and the farming level was raised. This new state of affairs was witnessed almost everywhere. With the exception of some areas hit by natural disasters in varying degrees, weather was favorable in most areas and was very good for the crops in some areas. The broad cadres and masses summed up this state of affairs: Policies were good, man was hardworking, and heaven gave us help.

On the basis of studying the decision of the central work conference, summing up experiences and perfecting and stabilizing the system of production responsibility, cadres and masses in our region at present have set off an upsurge of spring ploughing and production, resolved to strive for an all-round bumper harvest this year.

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QINGHAI

BRIEFS

ANIMAL HUSBANDRY--The spring situation in Qinghai's livestock-raising areas is excellent. According to incomplete statistics of the provincial Animal Husbandry Department, the number of lambs born in the livestock area in March was 1.36 million lambs, over 1.2 million of which survived. The survival rate was over 88 percent, an increase of approximately 10 percent over the figure for last year at the same time. As a result of each area having strengthened their management over the winter and spring pastures since the beginning of last winter, the loss of overwintering adult animals was only 0.77 percent of the total herd as of the end of last year. [Text] [Beijing RENMIN RIBAO in Chinese 17 Apr 81 p 1]

CSO: 4007/397

STORAGE, CONSERVATION OF WATER TO PREPARE FOR SPRING PLANTING NEEDED

Chengdu SICHUAN RIBAO in Chinese 16 Feb 81 p 1

[Article: "Intensify Storage and Conservation of Water To Prepare Sufficient Water Resources For Planting of Spring Crops"]

[Excerpt] Last year, quite a few places in Sichuan Province benefited from the rich experience in fighting drought of the past several years. They lost no opportunity to store water from the copious rains of the summer and autumn seasons in ponds, reservoirs, behind dams, and in winter storage in wet fields to win remarkable achievements. Statistics from the conclusion of the rainy season in late October show that water stored in water conservancy projects throughout the province amounted to more than 9.5 billion cubic meters or 76 percent of the needed quantity of water, a more than 900 million cubic meter increase over the same period last year. This constitutes a very favorable situation for increased agricultural output this year. However, in terms of the prefectures in the county, the water storage situation is unbalanced. In some places, the quantity of water in storage is even less than last year, and for a minority of communes and brigades, the problem of water shortage is a conspicuous one. This will be particularly true during the next 3 months or so during the period of concentrated use of water for spring planting and transplanting. The spring season is usually substantially without rainfall, and in addition to evaporation, leaking away and such natural causes for the consumption of water, there are numerous man-made factors causing loss and waste of water resources. In addition, meteorological forecasts call for a crop season that will be somewhat dry this year. Therefore, further attention to the storage of water, and particularly the conservation of water, has major ramifications for assuring planting and transplanting of crops, and for guarding against possible summer drought.

9432
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NEW VARIETIES OF RICE, COTTON, CORN PROMOTED

Chengdu SICHUAN RIBAO in Chinese 11 Feb 81 p 2

[Article: "Summarize Experiences and Actively Promote Key Measures for Increased Agricultural Output"]

[Excerpts] During the past several years, the broad masses of rural cadres in Sichuan Province have studied science en masse and used science in an effort to increase the level of scientific farming, a process in which they have taken new steps and accumulated numerous fine experiences. We should diligently summarize, utilize, and further increase the level of scientific farming so that agricultural science and technology will play a greater role in increased output. Experiences in various places provide the following several key measures to be taken.

Seeds are fundamental to the building of agriculture, and superior varieties are a basic requirement for winning high yields in agriculture. With each major breakthrough in innovation or extension to cultivation of superior varieties comes a tremendous increase in the agricultural output per unit of area. Since the promotion of "Fanliu," and "Fanqi" wheat, wheat yields throughout the province have broken 300 jin per mu. Since the promotion in cultivation of short stem superior varieties of rice, yields have increased to 600 or 700 jin per mu. Following the spread over wide areas of "Dongting No 1" cotton, yields have stood around a consistent 80 jin per mu. Particularly with the promotion during the past several years of hybrid rice, hybrid corn, and hybrid cotton over annually increasing areas, not only have per unit yields steadily climbed, but a heartening situation of propagation and spread of superior varieties has come about. In 1980, 10.42 million mu of hybrid rice was planted in the province for yields averaging 869 jin per mu or 200 jin more than from conventional varieties of rice. From hybrid rice alone, output increased by about 800 million jin, amounting to 40 percent of increased rice output. Growing of hybrid corn rose from 7 million mu in 1977 to 17 million mu, amounting to 72 percent of the province's corn acreage. Yields rose from 275 jin per mu in 1976 to 428 jin per mu, and total output rose from 5.92 billion jin to 10.35 billion jin for a 75 percent increase. Hybrid cotton has also begun to spread. In 1980, more than 100,000 mu of it was grown in the province to produce yields of 102 jin per mu, 47.8 percent more than from conventional cotton varieties. Utilization and spread of the "three hybrids" holds great promise for the increase to new levels of per unit yields of grain and cotton in Sichuan Province.

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SICHUAN

RESTRUCTURING COMMUNE, BRIGADE ENTERPRISES URGED

Chengdu SICHUAN RIBAO in Chinese 29 Jan 81 p 1

[Article by Special Commentator: "Earnestly Implement Readjustment Programs; Develop Commune and Brigade Enterprises in a Measured Way"]

[Excerpts] In the uplifting of agriculture during the period of national economic readjustment, one task that cannot be ignored is improved restructuring and steady development of commune and brigade enterprises so that they will play a greater role in the accumulation of funds for agriculture, strengthen the collective economy, and increase the earnings of commune members. During the past several years, Sichuan Province's commune and brigade enterprises have grown rapidly, and they showed steady growth last year as well in the preliminary implementation of readjustment programs. They already account for a definite proportion of Sichuan Province's position in the national economy. Experience has shown that growth of commune and brigade enterprises is extremely advantageous for increasing national financial income, for promoting growth of agricultural production, for increasing overall market supply, and for supporting large industries and the export trade. Take 1980 as an example. Revenues paid the state by commune and brigade enterprises in the province amounted to approximately 110 million yuan, a 96 percent increase over the previous year. Accompanying the end of the 3 year period of reduction or mitigation of taxes for commune and brigade enterprises may be tremendous future growth. In the present year, commune and brigade enterprises have returned to production teams almost 300 million yuan of workpoint funds, and they have paid about 600 million yuan in wages and living subsidies to commune members engaged in industry. Total annual profits for commune and brigade enterprises are forecast at 320 million yuan, of which, except for a portion paid to communes for use in the capital construction of agricultural bases and support to poor brigades, a 15 to 20 percent ratio will be directly distributed to production teams. The large quantities of light industrial manufactures produced during 1980 by commune and brigade enterprises such as raw silk, silk material, paper, alcoholic beverages, tea, foodstuffs, shoes, pottery and porcelain manufactures for everyday use, and manufactures made of bamboo, coir, rattan, and grass have helped market supply. The almost 30 million medium and small farm tools produced, as well as the more than 100,000 tons of chemical fertilizer and a quantity of farm machines and spare parts has directly supported agricultural production. Commune and brigade output of coal amounts to 10.14 million tons, and electric power output from their small hydroelectric power stations amounts to 500 million kilowatt hours. Both have mitigated, to a certain extent, the shortage of energy throughout the province. Commune and production brigade enterprises have also produced quite a bit of gold, low-grade iron, iron pyrite, lead and zinc, and manganese ores as well as large quantities of bricks, tiles, sand, stone, lime, and some cement and cement manufactures to support industrial production, and both urban and countryside construction. The opening of commune and brigade commercial networks has also been a convenience for the lives of the masses. All this has been accomplished with only a minimum of assistance funding by the state and without any expenditure of commodity grain or payment of wages. Were the state to do it, it is hard to say just how high economic disbursements would go! For example, the mining of 10 million tons of coal requires an 800 to 900 million yuan investment for capital construction alone. This shows that the two documents approved by the Third Plenary Session [of the 11th Party Central Committee] on hastening the development of agriculture and pertinent documents from the Provincial CCP Committee on development of commune and production brigade enterprises were correct in their formulations. In an overall sense, the thrust of Sichuan Province's commune and brigade enterprises is a correct one; growth has been healthy, and they should continue to be operated unswervingly and operated better.

In discussions about commune and brigade enterprises nowadays, some comrades sweepingly suppose that when commune and brigade enterprises are "operated in large numbers," they "squeeze out large industry," "hurt state procurement of agricultural byproducts," and "assault the market," etc. In their view, it seems that commune and brigade enterprises have been "botched," and the only thing to do with them is "cut them back and reduce them severely." Is this the true picture? Concrete analysis of concrete situations is the living soul of Marxism. All that is needed is to concretely dissect commune and brigade enterprises, and then it is not hard to see that this view of theirs is incorrect. The communes and brigades of Sichuan Province have by no means operated small cotton textile plants, small tobacco plants or enterprises that compete with big industry for raw materials. Existing silk, paper, and tea plants as well as a small number of salt plants and individual leader manufacturing plants have also operated in circumstances where raw materials are fairly plentiful, and they use surpluses remaining after large state-owned plants' needs for raw materials have been satisfied. Commune alcoholic beverage plants mostly use rural feed grains to make liquor, so essentially there is no problem of competition for raw materials. As for the procurement of agricultural byproducts, many years of negative and positive experiences have shown that only by adhering to the principle of "triple consideration" of the state, the collective, and individuals, can the enthusiasm for production of the peasants be aroused and fulfillment of state procurement quotas be promoted. Pertinent documents handed down last year by the Provincial People's Government have correctly resolved this problem; they must be thoroughly put into effect. Each commune and brigade should assure fulfillment of already set base figures for state procurement in order to satisfy the needs of existing state-owned plants for production and normal supply of markets. If only the benefits of a part are considered and the basic figures for state procurement are not fulfilled, this is wrong, of course. The total situation must be taken into account and changes made. However, agricultural byproducts remaining following fulfillment of the procurement figures should be permitted processing by communes and brigades as they see fit, or they may be sold to the state as well. At the present time, goods from commune and brigade enterprises in Sichuan Province consist primarily of two broad categories: light industry and raw fuels, and most kinds are in very short supply in the marketplace. Even though paper has enjoyed only sluggish sales for a time and has not moved well for several years, if attention is given to increasing designs, colors, and varieties, to improving quality, and actively developing foreign sales, the marketing problem can be solved. In order to guarantee supply and help industry balance output, commercial units should maintain certain reserves of some goods instead of cutting back when there is too much of them and chasing after them when they are in short supply, upsetting normal market supply. As for the chaotic situation that exists in price management by a small number of commune and brigade enterprises, determined corrections should be made during the process of readjustment. In this regard, so long as the large element of state enterprises is steady, commune and brigade enterprises will find no trouble remaining steady. In an overall sense, the number of commune and brigade enterprises in Sichuan Province is not great; nationally, they are in a backward position. They may not suit the needs of a developing situation, but they most certainly have not been "botched," requiring "great cutbacks and severe reduction." On the contrary, they need to be readjusted and restructured so that they can continue healthy and steady development. If "great cutbacks and great reductions" are made because of some problems in the progress of commune and brigade enterprises, that would be extremely disadvantageous to readjustment of the national economy. The experiences of history deserve attention. During the 3 years of adversity when readjustments were being made, commune and brigade enterprises in Sichuan Province were virtually cut to the bone with great damage to the vigor of the collective economy. Later on, commune and brigade enterprises were revived, but during the 10 years of catastrophe, they again came to be looked upon as a "capitalist tendency within the collective," and were throttled, creating great economic losses. In the present readjustment process, we should learn well from these historical experiences and never follow the same old disastrous road.

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PAYMENT OF HIGHER PROCUREMENT PRICES FOR TOBACCO REPORTED

Kunming YUNNAN RIBAO in Chinese 10 Mar 81 p 1

[Article: "Increase in Procurement Price Paid for Tobacco With Revenue Sharing for Excess Portion Surrendered; Provincial Flue-Cured Tobacco Work Conference Sets Actions To Be Taken for Development of Flue-Cured Tobacco Output"]

> [Text] State decides to increase procurement price for flue-cured tobacco going to market beginning this year in a 20 percent increase over 1978 in the overall procurement price for flue-cured tobacco.

Increase in the procurement price for flue-cured tobacco, and sharing of revenues derived from portions surrendered to the state in excess of the basic figure were major policies the provincial government decided to adopt at the flue-cured tobacco work conference recently held in Kunming for the purpose of further improving quality and output of flue-cured tobacco.

Last year, Yunnan's achievements in the production of flue-cured tobacco were substantial. Quality of leaf improved strikingly to a degree not surpassed in many years. The ratio of top and medium quality tobacco amounted to 56.72 percent of the total for a 10.77 percent increase over the previous year, and for a 34 jin increase over last year for an all-time high. Tobacco procurement totaled 2.04 million dan in a 7.4 percent overfulfillment of plan. But differences from one prefecture to another were great, and a great potential exists. Production of top quality tobacco has not yet attained an all-time high; the planted area has not fulfilled plan; and per unit yields have not reached advanced domestic levels. Flue-cured tobacco is one of the great strengths of Yunnan Province. Looked at in terms of the domestic and foreign market, the pace of production of flue-cured tobacco in Yunnan Province has to be quickened a bit. Consequently, the conference called for deployment for production of flue-cured tobacco this year in accordance with "a dedicated amount of area for an attack to achieve high quality, high output and increased earnings."

In order to fulfill Yunnan Province's flue-cured tobacco production plan for this year, the conference emphasized not only the establishment and perfection of various forms of a system of responsibility for the production of flue-cured tobacco and scientific tobacco farming, but also adherence to pricing policies for flue-cured tobacco. Recently the state decided to increase the procurement price for flue-cured tobacco beginning with the new tobacco sent to market this year, in a 30 percent increase over the overall procurement price paid for flue-cured tobacco in 1978. Yunnan Province needs to increase the amount of top and medium quality tobacco, decrease the amount of low quality tobacco, and somewhat cut back on lowest quality tobacco. Tobacco growing households everywhere should be propagandized so they know this, and there should be further arousal of the enthusiasm for growing tobacco of cadres and commune members. Once the procurement price for tobacco has been increased, the various subsidies paid in addition to price, the additional price paid for excess procurement, and bonuses given for top and medium quality tobacco, which currently prevail everywhere in the province, shall be abolished. In order to encourage tobacco growing areas to exceed quotas and provide the state with more tobacco, and more advantageously arrange for light industrial production and market consumption, it has been decided to set a base figure for tobacco to be delivered to the state, and for any tobacco deliverd to the state in excess of that base figure, the revenue department in the place where cigarette plants are located will return 50 percent of tobacco revenues to the tobacco producers. The economic benefits returned to tobacco producing areas will be used mostly for the development of tobacco production. Tobacco leaf procured from all jurisdictions will be tendered to the state in entirety for uniform handling by the Provincial Supply and Marketing Cooperative.

The conference noted that tobacco is a state-controlled category 2 non-staple farm commodity and a major raw material in light industry, which is to be handled in a unified way under centralized management of supply and marketing cooperatives. In planning, procurement, allocation and supply, it must be handled in accordance with the "four unifieds." Industrial and commercial administrative units must strengthen market management in accordance with policy regulations.

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CSO: 4007/327

ZONING WORK SAID NEEDED TO HASTEN AGRICULTURAL GROWTH

Kunming YUNNAN RIBAO in Chinese 10 Mar 81 p 2

[Article: "A Good Job of Agricultural Zoning Must Be Done To Accelerate the Pace of Agricultural Growth"]

[Text] In the current readjustment of the internal structure of agriculture, the rational development and use of Yunnan Province's natural resources for agriculture, and quickening of the pace of agricultural growth, the zoning of agriculture must be diligently done. This was the conclusion reached by a provincial agricultural zoning work conference recently held in Kunming.

This provincial agricultural zoning work conference summarized and exchanged a year's experiences in agricultural zoning work, and studied and drafted ideas for future agricultural zoning work in the province.

After more than a year, and with the guidance of CCP committees and the government at all levels, as well as the joint efforts of all units concerned, agricultural resources surveysand zoning work in Yunnan Province has chalked up some initial accomplishments. Proceeding from the completion of the compilation of an agricultural geography of Yunnan, the collection and collation of existing materials, and the summarization of past experiences in agricultural zoning, a concise comprehensive zoning of agriculture for the entire province (draft) has been completed, as has agricultural mechanization zoning (draft), agricultural climate zoning (draft), forestry zoning (preliminary draft), and improvement of use of red and yellow soil zoning (preliminary draft). The zoning pilot project jointly conducted by the province, prefectures, zhous and counties in Tengchong and Mengla counties has been virtually completed, and for some counties a comprehensive zoning of agriculture has been roughed out. In 35 counties, a soil survey has begun. Results of resources surveys and zoning have begun to be used in the readjustment of the internal structure of agriculture, in formulating agricultural development plans, and in guiding current production.

The conference acknowledged that despite the achievements with resources surveys and agricultural zoning, development has been uneven. Some places and units lack sufficient perception of the important significance of this kind of work and have not accorded it the attention it deserves. They are accustomed to guiding production according to the same old methods, and this is very incompatible with the present readjustment of the internal structure of agriculture, changing the passive state of agriculture in Yunnan Province, and in effecting the modernization of agriculture. The conference called upon CCP committees and the government at all echelons to place agricultural resources surveys and zoning work on their important agendas and make a solid start in this work.

As related to the realities in Yunnan Province, during the next several years resources surveys and agricultural zoning should take in hand five tasks: First is the virtual completion within 2 years of a rough agricultural zoning for all counties in the province, with a preliminary zoning of agricultural types or regions, and fairly realistic programs for the development of agricultural production that makes the most of strengths and avoids weaknesses. Second is the setting up of well-defined zoning pilot projects at the county level. This year and next year, each prefecture, zhou and municipality should select one or two counties (or municipalities) in which the rate of progress in soil surveying has been fairly fast, and in which conditions are fairly good for the beginning of all-around zoning pilot project work in accordance with uniformly established requirements in order to gain experience, to train mainstay cadres, and to gradually get fully underway. Third, gradual clarification of available resources, with the emphasis on a thorough check of soil resources. Fourth, continued comprehensive examination and comprehensive zoning of Zishuangbanna Prefecture. Fifth, continue to complete and perfect provincial level zoning.

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LULIANG COUNTY CONTINUOUSLY INCREASES AGRICULTURAL PRODUCTION

Kunming YUNNAN RIBAO in Chinese 24 Mar 81 p 1

[Article by Gao Huanwen [7559 3562 2429], Liu Shaoqing [0491 4801 3237], and He Shixi [6320 0013 3556]: "Agricultural Production Increased for 4 years in Succession in Luliang County"].

[Text] Agricultural production in Luliang County has increased for 4 years in succession, averaging a progressive increase of 10.3 percent for grain a year, and the total income from agricultural and sideline production has shown a progressive increase of 8.6 percent. Last year's total grain output increased 21 percent over the previous year while tobacco, edible oil, fruits, live hogs, silkworm cocoons, and ducks set record highs. The county delivered and sold 55.24 million jin of grain to the state, overfulfilling theprocurement target by 1.54 million jin. Commune members' living conditions have improved year by year; per capita grain ratio has increased from 424 jin in 1976 to 587 jin and total income from 132 to 163 yuan per capita. Recently, commune cadres have conscientiously summed up experiences in agricultural production increases, and are striving for a rich harvest for the fifth year.

Reorganizing and stabilizing the ranks of cadres and conscientiously implementing the party's rural economic policies: With a view to the correct implementation of party's rural economic policies, the Luliang County party committee started with reorganizing the ranks of cadres to ensure their relative stability. Each summer and winter, commune, brigade and production team cadres have received training in diversified forms and helped to get rid of "leftist" ideological influence, further liberate thinking, and enhance their understanding of policy and awareness of policy implementation.

Since 1979, the county has put into effect the policy of distributing according to work and instituted and perfected various systems of production responsibility and the system of personal responsibility for cadres. Of the 1,422 production teams in the county, 1313 have instituted the following systems of responsibility, taking account of leadership ability, level of management, and mass needs and desires: doing assignments in small groups and linking remuneration to output; specialized contracts which link remuneration to output; contracting work for segments of production and quota management. Of the 68 million jin increase in the county last year, more than 30 million jin of grain were produced by some 400 production teams that used the system of linking remuneration to output. This fully demonstrated the might of party's policy.

Persistently regulating rivers and watercourses and improving conditions for production: Luliang County was known as a "poverty-stricken area" in the old days. The Nanpan River and some 20 tributaries in the county area easily broke through their embankments and flooded; eight flood plains inside the embankments took up more than 80,000 mu of farmland. Drought and waterlogging were frequent occurrences and much farmland was affected by cold water. These circumstances severely hindered development of agricultural production. Since the cooperative transformation of agricultural production. Since the cooperative transformation of agriculture, cadres and the masses in this county have continuously built water conservancy projects with state support and by depending on the collective strength.

By 1980, the number of medium and small reservoirs have increased to 385 and electric drainage and irrigation stations have increased to 226; electric power has increased to 12,000 kwt and the area of effective irrigation has spread to more than 230,000 mu. At the same time, the Nanpan River was harnessed with the result that water can be stored in the upper reaches and drained in the lower reaches, thus elimin [illegible] the bad and promoting what is beneficial. In the summer of 1979 and 1980, two flood peaks, one 369 cubic meters per second and the other 405 cubic meters per second, approaching and topping the two flood peaks in 1974 and 1976, passed by without causing havoc. By building embankments, digging drainage ditches and draining off accumulated water, the eight flood plains inside the embankments have been transformed into more than 70,000 mu of fertile farmland. Improvement in the conditions for production has promoted agricultural production and brought about successive years of increase in grain output of which rice is the main crop.

Bringing the role of farm machinery into full play: Along with the development of agricultural production, the nine communes in the county have set up their tractor stations, relying mainly on funds raised by themselves while taking state aid. One-hundred and six brigades have set up tractor-ploughing teams and 454 production teams have bought tractors totalling 999 large, medium and small tractors. In the dyked areas, harvesting, threshing, winnowing, transportation, processing of agricultural and sideline products, drainage and irrigation are basically mechanized or semi-mechanized. Some machinery is also used in semi-mountainous and mountain areas. The widespread use of farm machinery has decreased the labor intensity of the commune members and made 30 percent of labor power available to engage in diversified economy of forestry, animal husbandry, sideline production and fisheries and increase the economic income of the collective and commune members.

Training agricultural scientists and technicians and constantly raising the level of scientific farming: In the county, a four-level network of agricultural science has been established to train commune and brigade cadres and agricultural scientists periodically by rotation so that they may study, experiment, demonstrate and popularize agricultural science and technology. After several years of practice, improved varieties of rice, corn, wheat, broad beans, and rape have basically been used in the county. A general survey of soil has brought to light the properties of cultivated soil; proper. The rational application of fertilizers has brought nitrogenous fertilizer under control; increased application of phosphate fertilizer and of more organic material as the base fertilizer has alleviated the imbalance among nitrogen, phosphorus and potassium. At the same time, cultivation techniques for rice, corn and wheat have been improved and rational close-planting has been introduced in a manner suited to local conditions. Plant protection has been strengthened over the last few years. Corn and wheat diseases have basically been brought under control. Rice blast and blight have been reduced to the minimum, and damage by paddy rice borers has dropped from 5 to 1 percent. Scientific farming has increased productivity and the per unit yield of grain has risen from 659 jin in 1976 to 941 jin last year.

Take grain as the key link, diversify the economy and gain all-around development: By summing up practical experiences accumulated over the years, the county party committee has rationally adjusted the inner structure of agriculture and crop distribution in such a way as to suit local conditions and ensure an all-round development of agriculture, forestry, sideline production and fisheries. With emphasis on grain production, vigorous efforts have been made to develop production of flue-cured tobacco, rape, mulberry, fruits, arrowheads, and lotus roots. With emphasis on pig-raising, efforts have been made to develop production of silkworm cocoons, ducks, and fish. Thus, land, soil, mountain and water resources are fully exploited and base areas for grain, pigs, silkworm cocoons, ducks and fruits are gradually being formed. Commodity rate is up year by year, contributing more to the state.

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YUNNAN

ECONOMIC CONDITIONS IN COUNTRYSIDE SAID GREATLY IMPROVED

Kunming YUNNAN RIBAO in Chinese 28 Mar 81 p 1

[Article: "Last Year Rural Production Developed in the Province, Commune Members' Income Increased, Their Living Conditions Improved the Economic Situation in the Countryside as a Whole Has Seldom Been So Good Since the Founding of the Nation--Per Capita Income Totalled 168.50 Yuan, a 16.7 Percent Increase Over the Previous Year; Per Capita Cash Payment for Commodities Averaged 62.30 Yuan, a 22.2 Percent Increase Over the Previous Year; Commune Members Consumed More Grain, Edible Oil, Meat Eggs, Vegetables, Sugar, Wine, and Cotton Cloth, Per Capita Consumption of Meat Amounting to 17.8 jin, a 10.6 Percent Increase Over the Previous Year; Bicycles, Sewing Machines, and Radios in the Hand of Commune Members at the End of the Year Increased 8.5, 38.9 and 32.6 Percent Respectively Compared With the Previous Year"]

[Text] Our reporter has learned from the provincial statistical bureau that from a survey of the economic conditions of 610 households in 28 countries including every type of area such as the plains, mountains, interior, and border areas) the bureau has drawn the following conclusion: Following the further implementation of the party's general and specific rural economic policies, production gained new growth, commune members' income increased and their living condition improved last year. The economic situation in the countryside as a whole has seldom been so good since the founding of the nation.

Faster production growth, higher commodity rate. Both cash and grain distributed by the collective to commune members increased in 1980, averaging 77.40 yuan net income per capita, an increase of 5.60 yuan or 7.8 percent over the previous year, and 469 jin of grain ration per capita was distributed, an increase of 43 jin or 10.1 percent over the previous year. At the same time, household sideline production developed at a greater rate, further increasing the family property of commune members and gradually augmenting the volume of commodities supplied to society. Output of grain and beans from commune members' private plots averaged 64 jin per capita, an increase of 33 jin or 100 percent over the previous year. Large domestic animals raised by each household increased 61.5 percent over the previous year, sheep and goats 177 percent, and eggs 8.3 percent. The number of fat pigs sold by commune members last year was the same as in the previous year (the meat weight of each fat pig was 8.5 percent greater); sales of sheep increased 200 percent, domestic fowls 17.4 percent and eggs 8.9 percent.

Greater growth in per capita total income and net income. Along with the growth of the collective economy and the household sideline production, total income averaged 168.50 yuan per capita last year, an increase of 24.10 yuan or 16.7 percent over the previous year. After deducting the production cost of household sideline production and paying tax, net income averaged 147.70 yuan per capita, an increase of 22.50 yuan or 18 percent compared with 125.20 yuan for the previous year. Of the net income, 77.40 yuan came from the collective, an increase of 5.60 yuan or 7.8 percent conpared with 71.80 yuan for the previous year; 54.60 yuan came from household sideline production; an increase of 12 yuan or 28.2 percent compared with 42.60 yuan for the previous year; 15.70 yuan came from other sources, an increase of 45.4 percent compared with 10.80 yuan for the previous year.

Looking at the different areas per capita net income was the highest in the plains amounting to 184.90 yuan, lower in partly mountainous area, amounting to 138.90 yuan, and the lowest in mountain areas, amounting to 130.40 yuan. Per capita net income was higher in the interior, amounting to 149.10 yuan compared with 142.00 yuan for the border areas.

Greater purchasing power and higher consumption level compared with the previous year. Of the net income made by commune membres last year, cash averaged 3.10 yuan per capita, an increase of 16.90 yuan or 25.20 percent compared with 66.40 yuan for the previous year. Growth in cash income of commune households was accompanied by corresponding growth in cash payment for commodities. Last year, cash payment for commodities purchased averaged 62.30 yuan per capita, an increase of 11.30 yuan or 22.2 percent compared with 51.00 yuan for the previous year. Of the cash payment for commodities purchased, more was spent to buy daily necessities and consumer goods, averaging 51.20 yuan per capita, an increase of 10.50 yuan or 25.8 percent compared with 40.70 yuan for the previous year. Consumption of goods averaged 122.60 yuan per capita, an increase of 11.10 yuan or 10 percent compared with 111.50 yuan for the previous year. With the increase in consumption, the consumption structure underwent marked changes. Consumption of clothing, articles for use and housing increased 12 to 51 percent respectively.

Growth in consumption of goods and further improvement in actual standard of living. Along with the development of production and growth in income, the major items purchased consumed by commune members for daily living and consumption increased in varying degrees last year, and the actual standard of living was further raised and improved. Consumption of the eight major necessities for daily living such as grain, edible oil, meat, eggs, vegetables, sugar, wine and cotton cloth increased. In terms of average per capita consumption, edible oil increased 25 percent to 3.50 jin, meat 10.6 percent to 17.80 jin, and wine 9.4 percent to 3.50 jin compared with the previous year.

Comparatively more commune members constructed housing and the condition of their housing improved. Housing increased from an average of 4.09 rooms in the previous year to 4.15 rooms per household last year, and from 10.09 square meters per capita to 11.2 square meters. During the year under review, 80 rooms built by 43 households, 7 percent of the households surveyed, were completed.

There was a faster growth in the "4 main items" of consumer goods which were bicycles, sewing machines, radios, and clocks and watches in the hand of commune members at the end of last year. Bicycles averaged 6.40 per 100 households, a 8.5 percent increase compared with 5.90 for the previous year; sewing machines averaged

7.50 per 100 households, a 38.9 percent increase compared with 5.40 for the previous year; radio averaged 12.60 per 100 households, a 32.6 percent increase compared with 9.50 for the previous year; clocks and watches averaged 26 per 100 households, a 13 percent increase compared with 23 for the previous year. Supply of bicycles, sewing machines, and radios fell short of demand. Were it not for the restrictions by ration cards, growth in these high- and medium-grade consumer goods would have been greater.

Cases where the production level of some of the communes and brigades was very low and members were badly off: Although the collective economy and household sideline production of commune members developed last year, the development was not even and teh income and production levels of part of the communes and brigades were still low and their members were still badly off. According to surveys, households in 11, 18 percent of the 61 production teams surveyed, had little resources and income and still experienced difficultues in their production and livelihood. Ten of these 11 teams are located in mountainous areas or cold high mountaineous areas. Four of these 11 teams live in most straitened circumstances; their average per capita net income was less than 80 yuan and per capita consumption of grain only 280-365 jin a year.

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PREVENTION, CONTROL OF WHEAT STRIPE RUST URGED

Kunming YUNNAN RIBAO in Chinese 14 May 81 p 1

[Article: "Urgent Attention To Be Given Prevention and Control of Stripe Rust in Wheat. Provincial Plant Protection and Plant Inspection Station Reminds All Ju-isdictions"]

[Text] The Provincial Plant Protection and Inspection Station recently reminded all jurisdictions as follows: A great plant disease threatening wheat output in Yunnan Province, stripe rust of wheat, is currently spreading through the central and western wheat growing areas of the province, and it is expected to become virulent during March and April. The main reasons for the disease are the high temperatures and high humidity of last winter and this spring, which helped the rust germs overwinter and reproduce. Autumn wheat and mountain area wheat had early outbreaks of the disease, and the quantity of germ accumulation was great, causing wheatfield outbreaks a month or so earlier than last year. The area of varieties susceptible to disease is large, as for example Yiliang County's 84,000 mu of wheatfields, more than 43,000 mu or 51 percent of which was planted to susceptible varieties, Moba 66, Moba 65 and Fengmai 13. Furthermore, should central and western Yunnan experience rainy weather during March and April, outbreaks of wheat rust disease will become very virulent. Therefore, action must be taken for prevention and control.

The Provincial Plant Protection and Examination Station has made the following suggestions in connection with the control of wheat rust virulence and damage, which is provided all jurisdictions for their reference. 1. Intensification of wheat rust prevention and control in the course of wheat cultivation, formulating effective prevention and control measures in accordance with laws governing the outbreak of rust disease. 2. Taking advantage of weak links in the growth and decline of rust disease, using chemicals scientifically. In mountain wheat areas, where the disease is widespread, spray with 200 parts of dixiuna [2420 4423 6871] or 500 parts of sodium fluorosilicate for control. In wheatfields where rust has broken out only in patches, remove the plants and sources of infection from the fields and spray once every 5 to 7 days for a total of two or three times to isolate the infected area, lower the number of germs, and control the spread. 3. Intensify field care to make the wheat become strong and grow well, increasing its resistance to disease. Attention should be given to scientific fertilization and watering to create conditions favoring growth of the crops and inimical to the spread of the disease, thereby reducing the damage caused.

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YUNNAN

BRIEFS

SUGAR CANE EXPORT INCREASE--By the end of March, the Yunnan Provincial Department of Commerce had already purchased over 144,000 tons of sugar cane, which is equivalent to 93 percent of the total provincial sugar output and is an increase of 4.4 percent over that of the same time last year. At present over 41,000 tons of sugar cane have already been shipped to other provinces. [Text] [Beijing RENMIN RIBAO in Chinese 11 Apr 81 p 1]

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